

2nd Draft
THE CALIFORNIA CLEAN MARINA
GUIDEBOOK

**A California Marina Operator's Guide to
Clean Marina Practices**

California Coastal Commission
June 2003

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Published December 2003

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Printed on recycled paper

ACKNOWLEDGEMENTS

This Guidebook was produced by the California Coastal Commission's boater education program, the Boating Clean and Green Campaign, program in partnership with the California Department of Boating and Waterways. Most of the funding for this publication was provided by the California Integrated Waste Management Board. Additional funding was provided by the National Oceanic and Atmospheric Administration.

Partners:

**California Department of Boating and Waterways
San Francisco Bay Conservation and Development Commission**

Funding Agencies:

**California Integrated Waste Management Board
National Oceanic and Atmospheric Administration**

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This document was prepared as a result of work funded in part by the California Integrated Waste Management Board and U.S. National Oceanic and Atmospheric Administration. The contents of this document do not necessarily reflect the views and policies of these funding agencies, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

The public comment and review process for this publication included five workshops for public comment and two drafts which received written comment and review from the public. The following people provided substantive comment during the various phases of public comment and review:

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California Clean Marinas Initiative Advisory Committee

This document was developed with significant input and assistance from members of the California Clean Marinas Initiative Advisory Committee. The Committee was formed both to assist the Commission in development of the Guidebook and to work towards the development of a clean marinas recognition program in California. The Guidebook is intended as a first phase in the development of a state-wide clean marinas recognition program.

All marinas in California were invited to nominate a representative to sit on the advisory committee. The Committee is comprised of members representing individual marinas (a mix of both publicly funded and privately funded marinas) and the other half represent marina and boating associations in California.

The Commission is grateful to members of the Committee for the extensive time and effort they devoted to the development of this document. Members of this Committee enthusiastically support clean marina practices and have been a positive force behind the creation of this document. The following people participated in the Committee:

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TABLE OF CONTENTS	PAGE
I. INTRODUCTION	7
• Promoting Clean Marinas through Education.....	7
• Clean Marina Recognition.....	7
• California Boating and Marinas.....	8
• How Do Boats and Marinas Affect Water Quality?.....	9
• The Scope and Organization of this <i>Guidebook</i>	10
II. MARINA MANAGEMENT	11
• Clean Marina Planning.....	11
• Marina Environmental Policies.....	14
• Staff Training and Emergency Response.....	16
III. MARINA OPERATION AND MAINTENANCE FOR POLLUTION PREVENTION AND CONTROL	18
• Vessel Cleaning and Maintenance.....	19
• Sewage Management.....	24
• Used Oil Collection and Controlling Oily Discharges.....	28
• Hazardous Waste Management.....	38
• Trash and Marine Debris Reduction.....	42
• Grey Water Minimization.....	46
• Fish Waste Management.....	48
• Boat Operation.....	50
• Storm-water Runoff.....	52
• Boater Education.....	58
IV. INFORMATION AND RESOURCES FOR CLEAN MARINAS	62
APPENDICES	
#1 California Clean Marina Checklist	
#2 Sample Marina Environmental Policies and Lease Provisions	
#3 A Boater’s Guide to Less Toxic Cleaning	
#4 Selecting a Hull Paint for Your Boat	
#5 Underwater Hull Cleaning “Best Management Practices”	
#6 Funding for Environmental Services at Marinas	
#7 List of Regional Water Quality Control Board offices in California	
#8 Used Oil Absorbent Disposal Fact Sheet	
#9 List of Certified Uniform Program Agencies (CUPAs) in California	
#10 Used Oil and Filter Fact Sheet	
#11 Hazardous Waste Generator Requirements Fact Sheet	
#12 EPA Identification Numbers Fact Sheet	
#13 Accumulation Times for Hazardous Waste Storage Fact Sheet	
#14 Management of Spent Lead Acid Batteries	

I. INTRODUCTION

Promoting Clean Marinas through Education

This Guidebook is part of the California Coastal Commission's clean marinas and boating education program, the Boating Clean and Green Campaign. The purpose of this *Guidebook* is to support marina operators in their role as stewards of the ecological resources that make boating in California so popular. Protecting water resources helps to ensure that current and future generations of boaters and other Californians will enjoy all the benefits associated with clean water, including abundant, diverse and healthy populations of fish and other aquatic species, aesthetically pleasing waterways, swimmable waterways, and clean beaches. Since thriving fish populations, swimmable waters, and clean beaches make boating enjoyable, protecting these resources is a way to protect the future of boating in California.

The Campaign has been providing technical assistance to marinas and educational outreach for marina operators and boaters since 1997. This Guidebook is an educational resource for marina operators to encourage implementation of voluntary practices that minimize water quality impacts typically associated with marinas. This Guidebook is intended as a reference document that can be used by marina managers to enhance environmental programs and awareness at their facilities. It recognizes a broad diversity among ports, harbors and marinas in California, and assumes that not all recommended environmental practices apply at any given venue

Clean Marina Recognition

In addition to encouraging marinas to implement clean marinas practices by providing educational resources, the Commission believes it is important to recognize those marinas that have already made significant efforts to minimize the environmental impacts of their facilities. Recognition of existing clean marinas will help to provide models for what can be done by showing what has already been done to keep marinas and boating in California clean.

While California does not currently have a state-wide clean marina recognition program, many marina operators and government agencies in California have expressed interest in developing one in the near future. Other states have accomplished this with good results. States and neighboring countries that currently have clean marina recognition programs include: Alabama, Connecticut, Florida, Maryland, Massachusetts, New Jersey, North Carolina, Maine, Mississippi, South Carolina, Texas, Virginia, Washington, D.C and Ontario, Canada. In addition, clean marina programs are currently being developed include: Delaware, Georgia, Illinois, Indiana, Kentucky, Louisiana, New York, Ohio, Puerto Rico, Rhode Island, Tennessee, Wisconsin, and all U.S. National Parks. A similar effort has been implemented in Europe known as the "Blue Flag" program.

In general, to be recognized as a "clean marina," these programs require a facility to be in compliance with all applicable environmental regulatory requirements and to implement certain additional voluntary measures to control pollution. In these recognition programs, marinas that meet established program criteria are acknowledged for their achievements, at a minimum, through publicity provided by the programs and logos and/or flags that identify the facility as having achieved clean marina status. Many programs offer additional advertising.

The *California Clean Marina Guidebook* describes the types of voluntary measures that could provide the criteria for a future statewide clean marina recognition program. Those marinas that implement a significant number of suggested strategies for minimizing the environmental problems addressed in this Guidebook will be well prepared to participate in a clean marina recognition program in the future. For more information about clean marina recognition and certification programs, see the Information and Resources provided in Section IV.

California Boating and Marinas

Boating is big business in California and its popularity continues to increase. There are nearly one million registered boats and over one million boaters in California. Approximately 10% of California's boaters keep their boats at approximately 650 marinas in the state. Based on the population of 34,758,000 Californians in 2001, when there were 967,909 boats registered, approximately one out of every 35 Californians had a registered boat. Recreational boat registration in California, and boating activity, has nearly doubled in the last 25 years and is projected to rise substantially in California over the next 25 years (Potepan, 1997). One study projected that the number of boats registered to California residents will increase to a total of 1.4 million by the year 2010 (Potepan, 1995).

Boating, and the services that support it, contribute significantly to California's economy, in terms of the actual dollars added to gross state product (GSP), and their contribution to bolstering the value of coastal resources for tourism and recreation. In California, boating contributed \$11 billion to the GSP in 1995, which represented about 1.2% of the State's economy (Potepan, 1995).

Ocean-dependant industries, such as recreational boating, and commercial fishing, depend on healthy ocean ecosystems. The same is true of inland waterways. By recognizing the economic values of tourism, commercial fishing, recreational boating, and the marine trade industries that support various forms of boating, California policy-makers have determined that managing California's ocean and inland water resources in an environmentally sustainable manner will provide long-term economic, as well as environmental, benefits to the State (California Resources Agency, pp. 2-5).

How Do Boats and Marinas Affect Water Quality?

California marinas range from coastal marinas that cater to commercial and larger boats including sailboats, to inland multi-service marinas including campgrounds, restaurants, shops and boat rentals on lakes and reservoirs, to marinas that simply store boats, the common attribute among them is that they provide in-water boat storage. The primary environmental impacts of in-water boat storage are associated with marine engines, on-board sewage systems, boat cleaning and maintenance, hull paints, and fishing and consumer products used on-board. While not enough is known about the relative level of pollution that boating contributes to the overall pollution problem in California, studies have shown that boating and marinas contribute to the problems of copper loading (caused by boat bottom paints), hydrocarbon pollution (associated with the operation and maintenance of marine engines), and sewage inputs (associated with onboard sewage systems or a lack thereof) (PRC Environmental, Marcus,

Mastran, McMahon, Milliken, NCDEM, US EPA). Currently, studies are being undertaken in an attempt to quantify the contribution of boating to the state's nonpoint source pollution¹ problem².

Marinas are certainly not the source of all pollution problems that threaten water quality. In fact, pollution found in marina waters can often be caused by the discharge of pollutants from upland sources that discharge to municipal storm drains, which empty into harbors and marina waters. However, boats in marinas can also be contributors. The U.S. Environmental Protection Agency (US EPA) provides the following interpretation of where marinas and recreational boating fall in the overall scheme of nonpoint source pollution:

“Although marinas are not one of the major sources of pollution to our nation's rivers, lakes, or estuaries, they are centers of recreation, and poor or inadequate pollution prevention practices in them can result in human health problems and local water quality degradation.” (US EPA, 2001)

The state of California also has programs aimed at minimizing the environmental impacts of: toxic industrial discharges from small and large businesses; fertilizers and pesticides from home gardening and institutional landscaping; chemicals, sediments and wastewater from agricultural discharges; oil, trash, and heavy metal discharges from stormwater runoff in urban areas; sediment and debris from construction activities; and a wide array of other activities that affect water quality. Boaters and marinas, like all California residents and small businesses, can take part in helping to eliminate nonpoint source pollution.

The Scope and Organization of this *Guidebook*

The following sources of pollution are addressed in this *Guidebook*:

- Vessel Cleaning and Maintenance
- Boat Sewage
- Used Oil Collection and Controlling Oily Discharges
- Hazardous Waste Management
- Trash and Marine Debris
- Grey Water
- Fish Waste
- Storm Water Discharge
- Boat Operation

¹ “nonpoint source pollution” is a regulatory term taken from the federal Clean Water Act, and refers to any source of water pollution that does not meet the legal definition of a “point source.” Point sources are generally sources of pollution that enter water bodies from an identifiable site, such as the end of a pipe, or channel, or conduit. Whereas non-point sources are diffuse sources which produce pollutants that are carried by rainwater and snow into surface or groundwater. The federal government requires that coastal states implement programs to minimize the impacts of marinas and boating and other types of non point source pollution to water quality.

² For example, the San Francisco Bay Conservation and Development Commission, starting in 2002, has undertaken a marina water quality monitoring program in the San Francisco Bay which will establish baseline levels of 2 or 3 pollutants typically associated with boating at several marinas in the Bay.

The *Guidebook* also addresses boater education as it is an important aspect of maintaining a clean marina. For resources that address other marina environmental topics, such as siting and design considerations or reducing energy and water consumption, use the “Resources and Information” list at the end of the *Guidebook*.

Sections II of the *Guidebook* addresses planning and managing a clean marina, and Section III addresses operating and maintaining a clean marina. For each issue or topic addressed in these main sections, the text is divided into the following subsections:

- **The Problem**-a description of the problem(s) the section is designed to address;
- **What marinas can do**- a description of voluntary measures marinas can implement to address the stated problem(s).
- **What boaters can do** -also included are lists of clean boating practices marinas can use to educate their customers.
- **Applicable Laws and Regulations** – at the end of each topic is a matrix that cites laws and regulatory requirements that apply to marinas with respect to pollution discharges and the installation of services to prevent pollution.

Section IV provides a list of information and resources related to each of the subsections of the *Guidebook*. Consult the Information and Resources section for additional general resources on clean marinas and clean boating.

III. CLEAN MARINA MANAGEMENT

The manner in which a marina is managed has a direct impact on the environment. A marina can ensure that the activities conducted on its premises will not generate pollution by enlisting employees, tenants, contractors, and other users of the facility in efforts to prevent environmental degradation. You can develop a clean boating partnership with customers and other marina users by taking the following actions:

- ✓ develop and implement a clean marina plan;
- ✓ develop marina environmental policies which are clearly communicated and well-enforced;
- ✓ properly train staff training to assist in clean marina operation; and
- ✓ educate boaters that use the facility.

A clean marina depends largely on the practices of its users. Tenants and guests need to understand their role in keeping marina waters and facilities clean and safe. The extent to which a marina uses techniques for outreach and education of its users is clearly reflected in the appearance and function of a marina. The methods and approach suggested for educating marina users is discussed in section III on page 58. This section addresses the three elements of clean marina management listed above.

The following recommendations should be viewed as “implementation options” or potential strategies, not requirements. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations. Therefore, there is no one-size-fits all strategy for addressing the environmental problems at California marinas. A marina operator should choose the strategies for managing a clean marina that are workable and which are most likely to result in the maximum environmental benefits.

1. Clean Marina Planning

The Problem

Developing an overall plan can make implementing clean marina practices more effective. Without a planning process, environmental practices implemented may not adequately address the marina’s needs. In addition, staff may not know who is responsible for which clean marina practices, and staff and marina tenants may not be fully engaged in helping to keep the marina premises and waters clean and pollution-free. Finally, marinas that operate waste management, fueling, and/or boat maintenance facilities are subject to a number of legal requirements, including plans and permits. Keeping track of these records and plans can be a challenge without a well-organized system.

What Marinas Can Do

Developing and maintaining one plan that identifies all clean marina-related programs (both required and voluntary), and describing how each program operates, and who is responsible for

each required task, will be useful both to management and staff in keeping things running smoothly.

The following steps are recommended for developing a clean marina plan.

- ◆ **Decide who will have responsibility for developing and implementing the clean marina plan.** In determining who should oversee implementation of the clean marina plan, be sure that management is either charged with implementation or that staff know that management views clean marina practices as a top priority. Without a firm endorsement by management or implementation coming from the top level at a marina, staff may not take clean marina efforts seriously. It is important that the person chosen be given the *authority* for implementation of the Plan, as well as the *responsibility*. Depending on the size of the facility, a marina operator may choose to select several different individuals to form a team that will work together to carry out the Plan. If so, make sure each team member is assigned specific responsibilities and that a protocol for communication between team members is established.
- ◆ **Conduct an on-site Clean Marina Assessment.** Use the California Clean Marina Checklist, provided in Appendix # 1, to assess operations and identify opportunities for reducing the environmental impact of the marina. The Checklist can help a marina to assess what it has already implemented and what it should consider implementing in order to be as environmentally sound as possible. Each marina will differ in terms of what programs and services are applicable to its operations. Some marina operators hire technical consultants to conduct on-site environmental assessments or audits and to develop a strategy for reducing habitat and water quality degradation.
- ◆ **Assess and Implement Environmental Regulatory Compliance.** Marinas in California may be regulated by a number of different programs, depending on the existing facilities and operations. A marina can use the regulatory matrices provided in this *Guidebook* to assess whether appropriate steps have been taken to comply with local, state, and federal regulations.
- ◆ **Develop a Clean Marina Plan.** Once the on-site clean marina and regulatory compliance assessments (if applicable) are complete, the actions identified by the assessments should be incorporated into a clean marina plan. Before completing the plan, a marina should complete the following tasks.
 - Solicit ideas and input from marina staff and personnel. Getting staff involved during the planning phase will aid in obtaining useful strategies for implementation and may help to gain their commitment to seeing the Plan through to completion.
 - For each action, identify the key personnel that will be involved in implementation and determine each person's responsibilities.
 - Identify key questions or issues that need to be addressed before action can be taken.
 - Determine costs, and develop a budget for items that have costs associated with them.
 - Develop a timetable for implementation of each action.
 - Make sure that key personnel assigned to each task are aware of the time and budget expectations associated with the task.

- ◆ **Communicate the Plan to marina staff.** Once completed, clearly communicate the contents of the Plan to staff and locate the Plan on-site in an area where staff have easy access to it. Make the Plan part of a staff-training program (discussed below). Communicate to tenants your clean marina plan goals and accomplishments using boater education techniques outlined in section III, page 58.
- ◆ **Foster a “clean marina attitude” among staff, tenants and visitors.** Find ways to make your efforts to be a clean marina visible to others. Let your employees, tenants and visitors know that your business strives to be a clean marina. Your environmental commitment will affect how others behave at your facility, and having a reputation as a clean marina attracts business.
- ◆ **Establish plans to continue evaluating, monitoring, inspecting and record keeping.** At least biennially, conduct a review of the Plan to analyze its overall effectiveness and consider any changes or improvements to the Plan. Maintain records of actions taken to implement the Plan and be sure to monitor both the progress and improvements realized as a result of the actions taken.

2. Marina Environmental Policies

The Problem

Without specific policies detailing a marina's expectations of tenants, visitors, contractors, and staff, there is little guidance for acceptable environmental practices at the facility. For example, with policies regarding boat cleaning and maintenance conducted over the water, many boaters are likely to conduct large-scale maintenance and repair activities right in the slip because it is less expensive than a haul-out for boat yard repairs. Without clear policies about what practices are and are not acceptable, a major opportunity for communicating the marina's expectations for tenant environmental practices is missed. Furthermore, staff will likely be unclear about what is acceptable behavior for marina tenants and will not have clear guidance as to what activities are and are not acceptable. Thus, if a member of the marina staff sees a boater conducting a large-scale boat refurbishing project in the water and causing the discharge of sanding debris, paints, and other boat maintenance products, he or she can request that the boater cease these activities, but cannot refer to any policies of the marina that might compel the boater to comply with such a request.

What Marinas Can Do

Clearly-communicated and well-enforced environmental policies for tenants, contractors, live-aboards, transient boaters and day-users help marinas to maintain both clean water and clean marina facilities. Many slip-holders appreciate having clean facilities and the confidence that their marina will prevent or discourage illegal discharges from tenants, contractors or visiting boaters.

- ◆ **Develop marina environmental policies.** The first step in operating a clean marina is to establish a set of environmental policies that are tailored to the practices and boating habits of the marina's boating community. A sample set of marina environmental policies, and lease / contract language is provided in Appendix #2.
- ◆ **Communicate marina environmental policies to tenants, visitors, and contractors.**
 1. **Incorporate environmental policies into contracts:**
 - include language that requires adherence to these policies in contracts for slip-holders, live-aboards, transients, charters, boat maintenance contractors, and others that might contract with the marina (see Appendix #2 for an example);
 - clearly state consequences for failure to adhere to such policies (for example, request to cease work, penalties, or in severe cases, eviction);
 - advise those that are provided access to the marina but not under contract or lease about the marina's environmental policies.
 2. **Post signs to convey environmental policies in conspicuous places (fuel docks, pump-out stations, recycling stations, marina office).** See section III, page 58 for information about how to produce signs.

3. **Provide marina users with educational information that supports the marina's environmental policies.** For suggested educational strategies, see section III, page 58.
- ◆ **Respond to polluting customers and boat maintenance workers.** Marinas will differ in their approach to those who violate marina policies and responses will vary depending upon the violation. Typical responses range from providing educational materials, to issuing warnings or orders to cease work, to enforcement actions by public agencies, to eviction.
- ◆ **Identify violators of marina policies.** It's often difficult to identify the source of a discharge after it has occurred, which makes responding to the problem even more difficult. Some possible approaches to identifying violators include:
 1. Establishing a daily inspection routine with staff for proper materials management, conduct of maintenance and repair work in the slip. Have them investigate the source(s) of any pollutant or debris discharges;
 2. Establishing a "dock monitor" for each dock (i.e. a tenant) who is responsible for keeping an eye on things, helping to educate his or her neighbors about marina environmental policies;
 3. Inserting dye-tabs into holding tanks to identify sewage (and in some cases grey-water) discharges;
 4. Keeping lines of communication open – some examples include: having suggestion boxes; being involved in the tenant association; ensuring confidentiality when tenants report; and responding immediately when tenants do report.

3. Staff Training and Emergency Response

The Problem

Without well-trained staff who know the protocol for responses to emergencies and illegal discharges, small problems can become big ones. When incidents occur, important emergency or environmental response procedures may be overlooked. Even in non-emergency situations, staff may not be prepared to respond or to provide important information and advice to others.

What Marinas Can Do

Having a well-trained staff is an important aspect of clean marina management. Since boaters and contractors who conduct boat cleaning and maintenance seek the assistance of marina staff in handling waste disposal and boat maintenance questions, staff need to be knowledgeable about the marina's environmental services and policies. A well-trained staff can respond to:

- questions about the location of used oil and hazardous waste collection facilities, solid waste recycling services, sewage pump-out services, bilge pump-out and cleaning services, and oil change services;
- oil and fuel spills;
- spills of other chemicals or pollutants;
- sewage discharges; and
- other emergencies

Marinas should consider including the following components to their staff training programs:

- ◆ **Oil Spill Response Training.** It is advisable to be prepared to respond quickly and effectively to an oil or fuel spill in order to minimize the size of the spill, its potential environmental impact, and the marina's potential liability. Check the Applicable Laws and Regulations section for information about required training at facilities with fueling facilities or oil storage tanks of certain capacities.

The most common hazardous materials and oil spill response training is called a HAZWOPER training. For information about different types of training available, refer to the Information and Resources provided in section IV.

At a minimum, staff should be trained as to:

- who to call when a spill occurs;
 - the location and method of deployment of marina oil spill response materials; and
 - how to properly record the incident.
- ◆ **Conduct regular emergency response training and drills for staff.** Check the Applicable Laws and Regulations section for required trainings for employees who may be exposed to hazardous substances and where to find more information about training programs offered.

- ◆ **Responding to polluting customers, workers, and visiting boaters.** In order to address the variety of types of pollutants that may be discharged by your tenants, their contractors, and visiting boaters, it is important that staff be familiar with:
 1. Marina environmental policies;
 2. What environmental services are available at or near the marina?
 3. How to operate on-site environmental services, such as, sewage pump-outs, oil collection systems, and bilge pumps;
 4. The location and hours of operation of city or county solid and hazardous waste recycling and disposal facilities;
 5. How to notice and address these activities:
 - Colored plumes in the water where underwater hull cleaning is being conducted
 - Bilge water discharge that causes an oily sheen;
 - Fuel spills at the fuel dock;
 - Uncontained sanding, painting, varnishing, cleaning or refinishing that causes release of liquids or debris;
 - The use of environmentally harmful cleaning products.
 6. How to respond to polluting customers and workers.
- ◆ **Designate the person(s) with authority to approach boaters or workers who are polluting.** Staff should know how much authority they have to deal with these situations and when to report pollution incidents to the manager.

IV. MARINA OPERATION AND MAINTENANCE FOR POLLUTION PREVENTION AND CONTROL

Operating and maintaining a marina in an environmentally sound manner is the key to being a clean marina. Providing waste management facilities and other environmental services for boaters is an essential component of pollution prevention and control, since it is largely boater practices that impact the environment at a marina. By supporting and encouraging the clean boating habits of tenants and of on-site workers in everyday operations, marinas can ensure their facilities will minimize impacts on water quality. Making clean environmental services available and actively promoting clean boating through education can dramatically improve not only water quality, but also cleanliness and customer satisfaction at a marina.

The following elements of operation and maintenance of a marina for pollution prevention and control are discussed in this section:

1. vessel cleaning and maintenance
2. sewage management;
3. oil and fuel contamination;
4. hazardous waste management;
5. solid waste management;
6. grey water minimization;
7. fish waste management,
8. boat operation,
9. storm water management; and
10. boater education.

1. Vessel Cleaning and Maintenance Operations

The Problem

Boats require regular maintenance and repair, both on the topside and on the bottom. Topside activities include: cleaning dirt and debris off the topside, and refinishing wood, fiberglass, and paint surfaces (involves sanding, stripping, spray painting, fiberglass repair). Bottom-side activities include removing marine growth, removing old paint and hull coatings, and repainting or coating the hull. Engine maintenance, bilge cleaning, and cleaning carpets, fixtures, and galleys are also part of the routine maintenance on many boats. These activities, conducted on or near the water, can release solvents, strippers, paint chips, dust, phosphates, detergents, acids, oils and grease, all of which can be harmful to the aquatic environment. The environmental impacts associated with these types of pollution discharges range from depletion of oxygen in the water column, contamination of sediments, clogging fish gills, toxic exposures and fish kills, and bioaccumulation of toxics in the food chain. In addition, when conducting dredging operations, marinas that fail to control the discharges of toxic boat cleaning and maintenance activities often face increased costs of disposal for contaminated dredge materials.

What Marinas Can Do

The following recommendations should be viewed as “implementation options” or potential strategies, not requirements. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations. Therefore, there is no one-size-fits all strategy for addressing the environmental problems. A marina operator should choose the strategies for managing a clean marina that are workable and most likely to result in the maximum environmental benefit.

- ◆ **Adopt a policy regarding the amount and type of work that can be performed over the water.** Encourage boaters and contractors to limit sanding, refinishing, and painting the topside to work where debris can be contained on the vessel and removed for disposal. For sample environmental policies, refer to Appendix #2.
 1. Educate boaters and contractors about this policy through the distribution of educational materials (see boater education described in section 10, page 58).
 2. Encourage or require boaters and contractors to limit work by including these recommendations or requirements in marina environmental policies and contracts with contractors and boaters.
- ◆ **Discourage large boat maintenance projects from being conducted over the water.** Projects where debris can't be contained and larger renovation projects should be conducted in boat yards with adequate waste collection and treatment systems, otherwise marinas should provide enclosed, indoor boat maintenance areas that prevent debris from being transported to adjacent waterways.
- ◆ **Establish a lending program for pollution prevention equipment.** Purchase and make available to your tenants equipment that helps to prevent discharge of debris associated with boat cleaning and maintenance.

1. Provide vacuum sanders with bag attachment.
 2. Provide vacuums for cleaning various types of debris.
 3. Provide portable oil change equipment that contains used oil effectively and prevents oily discharge from the crankcase.
- ◆ **Use a No-Discharge Approach to Maintaining Marina Structures.** Scrape, sand and paint in-water and shore-side structures according to the same management practices used for boat cleaning and maintenance. If feasible, move floating structures to shore for scraping, painting, and major repairs and contain and collect wastes and debris for proper disposal.
- ◆ **Require that all boat workers and independent contractors register with and receive approval from the manager before conducting work on the marina premises.**
1. Distribute a set of marina environmental policies to all contractors that work on the premises;
 2. Keep a list of “approved” contractors and self-employed boat workers that have a track record of complying with the marina environmental policies for in-water boat cleaning and maintenance and that have provided copies of insurance and a business license.
 4. Make the list available to tenants. If you’re a publicly funded marina, be sure to include a disclaimer that indicates that the list is not an endorsement of any particular business and have the disclaimer reviewed by legal counsel.
 5. Update the list of “approved” contractors by eliminating those who violate marina environmental policies;
 6. It’s a good idea to have the marina listed as an additional insured party in the policies of contractors working at your facility;
- ◆ **Encourage the use of less-toxic cleaning and repair products.** Encourage the use of phosphate-free and biodegradable soaps, and household alternatives to traditional cleaning products (see Appendix #3). Use of cleaners should be kept to a minimum. Scrubbing and rinsing the boat with freshwater after each trip reduces the need for cleaning products.
1. Make these products available at the marina chandlery.
 2. Educate boaters and contractors about these alternatives through the distribution of educational materials (see section 10, page 58). Use the “What Boaters Can Do” section below to provide advice to mariners.
 3. Encourage or require boaters and contractors to use less toxic cleaners by including these recommendations or requirements in marina environmental policies (see sample marina environmental policies in Appendix #2).
- ◆ **Limit the accumulation of leftover products that pose an environmental hazard.**
1. Create a notice board for boaters to offer leftover products to others.
 2. Create a “give-away” shelf or center at the marina where boaters can bring or obtain leftover products. Make sure it is an enclosed proper storage area for hazardous materials.
 3. Inform boaters and contractors of the location of the closest hazardous waste disposal facility or that they can call 1(800)CLEANUP to find such a location.

4. Used marina environmental policies (see Appendix #2 for an example) and boater education, as provided in section 10, page 58, to encourage boaters and workers to reduce waste. Check the “What Boaters Can Do” section for tips for your customers.
- ◆ **Educate boaters and contractors to minimize the amount of debris entering the water from surface preparation.** Use environmental policies (see Appendix #2) and boater education strategies (see section 10, page 58) to encourage boaters to limit work performed in the slip to small touch-up jobs and to employ the following recommended practices. Check the “What Boaters Can Do” section for tips that you can provide your customers.
 - ◆ **Educate boaters and contractors to spill-proof cleaning and maintenance activities.** Use marina environmental policies (sample provided in Appendix #2) and boater education (see section 10, page 58) to encourage these recommended practices for boaters and boat workers. Check the “What Boaters Can Do” section for tips to provide to your customers.
 - ◆ **Reduce discharges of toxic hull paints and bottom coatings.**
 1. Make less toxic hull paints and bottom coatings available at the marina chandlery.
 2. Use marina environmental policies (sample provided in Appendix #2) and boater education techniques (as discussed in section 10, page 58) to advise boaters about effective anti-fouling strategies and hull paints and coatings that minimize the release of copper and other pollutants. See Appendix #4 for information about selecting less-toxic hull paints, and the “Information and Resources” section for sources of additional information. Check “What Boaters Can Do” for tips to provide to your customers.
 - ◆ **Minimize discharges of copper and other toxic heavy metals caused by underwater hull cleaning.**
 1. Identify local divers trained in the use of “best management practices” for underwater hull cleaning. While there is no state regulation that identifies best management practices for underwater hull cleaning, there are educational institutions and professional divers associations that are investigating “best management practices” for underwater hull cleaning in California. For more information, consult the additional resources provided in Section IV.
 2. Allow only divers who are familiar with underwater hull cleaning “best management practices” to conduct work at your facility or make a list of divers that employ best management practices for underwater hull cleaning available to your tenants. See Appendix #5 for an example of underwater hull cleaner’s best management practices.
 3. Use marina environmental policies (sample provided in Appendix #2) and boater and contractor education strategies, as described in section 10, page 58, to encourage the use of best management practices for underwater hull cleaning.

What Boaters Can Do

Save major boat repairs and cleaning for the boat yard where toxic wastewater is collected for treatment and proper disposal.

Tips for the Topside

Reduce the Use of Toxic Cleaning Products:

- Choose less toxic cleaning products, such as, non-phosphate, biodegradable cleaners.
- Use less product and more elbow grease!
- Reduce the need for boat soaps by scrubbing and rinsing with freshwater after each trip.
- Use canvas boat covers to keep boat clean between trips and reduce the amount of cleaning you need to do.
- Contain spills and debris using tarps and collect using vacuums or brooms.

Spill-proof Cleaning and Maintenance Activities

- Plug scuppers to contain spills.
- Always mix paints, varnish, epoxy and other products over a tarp in a drip pan. Use tarps and containers to catch spills and drips. Keep absorbents readily available to wipe spills.
- Tightly seal containers for products when not in use in order to reduce the potential for spills.
- Conduct maintenance work aboard your boat, not on the docks or over the water.

Minimize emissions from surface preparation

- If performing work outdoors, refrain from sanding or painting on windy days when debris or paint can be carried to the water or other areas of the marina where it will contaminate storm-water.
- Use vacuum sanders with dust containment bags and low-density, high volume sprayers at the marina chandlery.
- Have boaters sand and paint large areas only in designated shore-side boat maintenance areas, using vacuum sanders with dust containment bags and high-density low volume sprayers.
- Use tarps or visquine (plastic sheet) to catch and control falling debris, and vacuum or sweep frequently to prevent discharge of debris into the water. Reverse boat in the slip to work on the other side. Reuse tarps and sheets after cleaning.
- Put sanding dust into the trash.
- Plug scuppers to contain dust and debris and spills.
- Don't sand underwater or in windy conditions, when sanding debris cannot be contained.

On the Bottom-Side...

Choose less-toxic hull paints and bottom coatings.

- Select a paint that does not require caustic solvents and releases little or no pollutants.
- Use a hard, less-toxic paint – consult with the boat yard or marine supply shop to determine which anti-fouling strategy is best both for your boat and the environment.

Use environmentally sound underwater hull cleaning practices, or select a diver that uses them.

- Don't clean hulls in the water that are so fouled that cleaning must be abrasive and is likely to result in paint removal and discharge of toxic heavy metals.
- Perform regular hull maintenance to prevent hard marine growth and hull drag.

- Perform hull cleaning in accordance with the correct procedure for the type of hull coating or bottom paint.
- Clean using non-abrasive methods. Don't sand or strip hull paint underwater.
- Bring zinc anodes back to shore and recycle or dispose properly.
- Clean gently to avoid creating a colored plume of paint in the water.

2. Sewage Management

The Problem

Overboard discharge of raw or poorly treated sewage wastes can spread disease, contaminate shellfish beds, and lower oxygen levels. Humans exposed to polluted water can develop respiratory or gastrointestinal illnesses. Sewage-contaminated shellfish, eaten raw or poorly cooked, can transmit waterborne diseases to humans including hepatitis, typhoid, and cholera. Oxygen is needed to decompose sewage. As a result, sewage in the water may deplete the water's oxygen level, which deprives fish and other aquatic animals of oxygen necessary for their survival. Nutrient-loading, caused by sewage discharge, also promotes algae growth, which creates additional demand for oxygen.

Scientists use fecal coliform bacteria counts to measure sewage pollution, and studies have found high levels of coliform bacteria in areas with heavy concentrations of recreational boats. Studies have also shown a direct relationship between the number of boats in a sampled area and increased coliform levels in both the water column and shellfish.

Holding tank additives used in Type I and II Marine Sanitation Devices (MSDs) can include chlorine and formaldehyde along with other disinfectants for treatment of sewage. These substances are harmful when discharged into the marine environment, especially in shallow waters where there is poor tidal flushing.

What Marinas Can Do

The following recommendations are “implementation options” that are suggested for addressing the problems outlined above. These should be viewed as potential strategies, not requirements. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations. Therefore, there is no one-size-fits all strategy for addressing the environmental problems. A marina operator should choose the strategies for managing a clean marina that are workable and which are most likely to result in the maximum environmental benefits.

- ◆ **Install a sewage pump-out system.** Help boaters comply with sewage discharge regulations and keep marina waters clean by installing a sewage pump out system. For information about Clean Vessel Act (CVA) grant funds for sewage pump-outs that can be obtained from the California Department of Boating and Waterways (DBW) see Appendix #6, Funding for Environmental Services at Marinas.
- ◆ **Select appropriate sewage disposal systems for the types of boaters at your facility.** Choose a system that best meets the needs of facility users (tenants and guest vessel operators). The system selected by a marina should service the types of boats and boating at the facility. Determine whether the system needs to accommodate boats with holding tanks of various sizes, with port-a-potties, live-aboards, or boats with no installed MSD. Options include:

1. sewage pump-out permanently fixed to the dock;
 2. pump-outs installed at each berth;
 3. mobile system mounted on a boat; or a
 4. dump station for port-a-potties.
- ◆ **Select a convenient and accessible location.** Place a fixed pump-out where it can be accessed by all types of boats with holding tanks that use the marina. T-heads at guest docks are good locations. Make pump out stations available to customers at times that encourage their use, such as, all the time, or when the marina is busiest.
- ◆ **Regularly maintain and inspect the pump-out system to keep it in good working order.**
1. Create a daily inspection schedule.
 2. Assign this task to a staff member.
 3. Make sure staff know the protocol for addressing a broken system and that the response time is quick.
 4. Use signage to indicate phone number to call when the system is disabled.
 5. Provide prompt repairs for broken systems.
 6. Arrange for a qualified contractor to provide service and repair in a timely manner.
- ◆ **Decide whether or not a fee will be assessed.** Providing pump-outs for free or at a reasonable cost best for the environment because more boaters are likely to use the system. Facilities installed with CVA grant funds may not charge more than \$5 per pump-out. Research conducted by the US EPA found that boaters are willing to pay between \$3 and \$7 for the service (Rhode Island Sea Grant). Consider these options for charging for sewage pump-out services.
1. Provide free pump-outs and incorporate costs into slip fees.
 2. Assess a monthly sewage pump-out service fee to all vessel owners/tenants that have an on-board holding tank. Some marinas provide the service either with built-in slip sewage pump-out services, or by hiring a mobile sewage pump-out operator to service vessels in the marina on a regular basis.
 3. Provide token-operated services.
 4. Provide free-pump-outs with refueling.
 5. Provide free pump-outs for tenants only.
- ◆ **Provide adequate, convenient, and comfortable restroom facilities.** Providing convenient, accessible (24 hours), clean, functioning restrooms helps boaters to reduce the use of on-board systems. Install a lock or key guard on restroom doors so boaters will feel safe using them, particularly late at night. In marinas with guest docks and transient boaters, some restrooms should be open to the public. If climate warrants, provide air conditioning and heating.
- ◆ **Provide adequate sewage management services for live-aboards.** Options for providing such services include:
1. Direct sewage hookups.
 2. Portable sewage pump-out services

3. Require live-aboards to contract with a mobile pump-out service.
4. Charge live-aboards a monthly fee and arrange for pump-out service on a regular (adequate) basis.
5. Encourage live-aboards to use shore-side facilities.
6. Insert dye tabs into every boat with a toilet.
7. Offer to demonstrate the proper way to secure the “Y” valve.

- ◆ **Educate boaters about sound sewage management practices.** Education and outreach strategies are discussed in Section III, page 58. Use marina policies (sample provided in Appendix #2) to encourage proper sewage management practices. The section on “What Boaters Can Do” (below) provides tips for your customers.

1. Encourage boaters to have a Courtesy Marine Examination, offered by the US Coast Guard Auxiliary or Power Squadrons.
2. Recommend that boaters service their MSDs annually to ensure they are functioning well.
3. Encourage boaters to use Type III systems and ensure that the “Y” valve is locked and secured while in port and within the navigational waters of the state.
4. To encourage proper sewage pump-out usage, provide signage and clear instructions for operation of the sewage pump-out at the facility.
5. Offer existing tenants and new tenants an opportunity for a demonstration in the operation of the system.
6. Post signs prohibiting the discharge of sewage in the marina and identify the location of sewage pump-out facilities or services.
7. Post sewage pump-out signs that identify the pump-out facility using the national sewage pump-out logo. Signs with these logos are available from the Department of Boating and Waterways (see the “Information and Resources” section, below).
8. Be careful how signs are worded. Make sure the system will not be confused with a bilge pump-out, or with the fuel pump. “Sewage Pump-out” or “Sewage Dump Station” are recommended identifiers.

- ◆ **Consider working with local and state governments to declare your harbor a no-discharge area, once adequate sewage pump-out facilities are in place.** It is illegal to discharge untreated boat sewage into any of California's lakes, rivers, reservoirs, or coastal waters within the three-mile U.S. territorial limit. A no-discharge area is an area where it is illegal to discharge treated or untreated sewage. There are 11 federal "No Discharge" Areas in California where the discharge of any untreated or treated boat waste is prohibited. These include:

1. Lake Tahoe
2. Mission Bay
3. San Diego Bay - Less than 30 feet mean lower low water
4. Oceanside Harbor
5. Dana Point Harbor
6. Upper and Lower Newport Bay
7. Sunset Aquatic Park (Sunset Bay) - Inland of Pacific Coast Highway Bridge
8. Huntington Harbor
9. Channel Islands Harbor

- 10. Avalon Bay Harbor
- 11. Richardson Bay

The federal government (through U.S. EPA) designates areas as no-discharge areas. For information about how No Discharge Areas work or how to obtain designation, check the Information and Resources provided in section IV.

What Boaters Can Do

- Always use on-shore restrooms when docked and before casting off.
- Plan ahead for restroom stops.
- Do not discharge untreated sewage in any lake, river, or in coastal waters within the 3 mile territorial limit.
- Within the 3-mile territorial limit, always discharge holding tanks at sewage pump-out facilities.
- Boats without toilets – use a portable toilet on-board (port-a-potty) and empty at a dump station or at home restroom.
- If you have a Y-valve with a through-hull fitting that allows direct overboard discharge, it must be secured in a closed position (using a padlock or non-releasable wire tie) when within the 3-mile limit.
- Never discharge any sewage, treated or untreated, in a federally-designated “no-discharge area.”
- Avoid holding tank deodorizers and treatment chemicals that contain formaldehyde. If you must use a holding tank additive, use enzyme-based products.
- Choose marine sanitation devices that use a holding tank or portable toilet. When discharged at a pump-out or dump-station, they offer the best environmental protection.

3. Oil and Fuel Contamination

The Problem

It's not uncommon for boats to spill small quantities of refined petroleum products in harbors and marina waters, which typically have poor circulation and flushing (Hollin et al, 1998.) The primary contaminants in pleasure craft oil and fuel are polycyclic aromatic hydrocarbons (PAHs) (Johnson, 1998). Gasoline also contains benzene, a carcinogen. Oil may contain contaminants such as zinc, sulfur, phosphorus (Valentine 1998), vanadium and nickel (NRC, 1985).

Very small amounts of oil and fuel (0.1 to 0.5 parts per million) can be harmful to aquatic life (Milliken and Lee). Oil spills disperse over vast areas of the water's surface. Left unmitigated, one pint of motor oil can cover one acre of water surface area, killing or contaminating creatures at the bottom of the food chain, such as Dungeness crab larvae, fish eggs and plankton. The most obvious effects of water contamination caused by petroleum products include odor, an off taste in fish, and toxic effect on marine organisms (Gordon, p.11). Studies have documented elevated levels of hydrocarbons in samples of the water column and sediments from marinas.

Oil and fuel discharged into marina waters comes from the careless practices of boaters while they are engaged in:

- refueling inboard and outboard engines;
- engine maintenance and repair;
- crankcase oil transfer procedures;

In addition to boater practices, marina waters may become contaminated with oil from:

- storm drain discharges into marina waters;
- sunken and abandoned vessels;
- leaks from bulk storage tanks and other containers;
- storm drains which carry oil from paved surfaces, such as parking areas, and
- boat launching ramps where small spills and leaks from cars, truck, hydraulic trailers, and tractors occur.

What Marinas Can Do

The following recommendations are “implementation options” that are suggested for addressing the problems outlined above. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations. Therefore, there is no one-size-fits all strategy for addressing the environmental problems. A marina operator should choose the strategies for minimizing oil and fuel discharges that are workable and most likely to result in the maximum environmental benefit.

Marinas can control sources of oil and fuel contamination by implementing measures that:

- **minimize oily discharges from boats**

- **facilitate proper disposal of oily wastes**
- **minimize fuel discharges**
- **provide adequate prevention and response to spills**











Other solutions address storm-water runoff from parking lots and other paved areas. These solutions are provided in section 9, Storm Water Control.







HOW TO MINIMIZE OILY DISCHARGES FROM BOATS

- ◆ **Inform marina tenants of practices that minimize oily discharges.** Provide boaters with the following information. See Section 10, page 58 for educational methods to deliver this information. See “What Boaters Can Do” for tips that you can provide to your customers.
- ◆ **Develop marina environmental policies that will help to minimize oily discharges.** For example, institute a policy that prohibits the release oil or fuel in any quantity that will either cause a sheen or emulsion, and which prohibits the application of detergents or emulsifiers to disperse an oil or fuel spill on the water’s surface or in a boat’s bilge (these activities are illegal, see Applicable Rules and Regulations). See Appendix #2 for sample policies.
- ◆ **Provide a method for preventing overboard disposal of oily bilge-water, either a bilge pump-out facility or service, or oil absorbent pad distribution and collection.**
 1. **Bilge Pump with Oil-Water Separation Systems.** A bilge-water pump attached to an oil-water separation system captures used oil for recycling and removes oil and/or fuel from the water before it is discharged either to the sanitary sewer, the nearby waterway, or a holding tank. Due to the high cost (\$5,000-40,000 for equipment plus installation), this type of system is recommended where there are significant numbers of inboard motor boats, where contaminated bilges occur at least occasionally, or in marinas with commercial fishing boats. Some recommendations for installing bilge pump-out systems include:
 - Check with local used oil programs to determine whether they will provide funding for equipment purchase, installation, and on-going maintenance (see Appendix #6 Funding for Environmental Services).
 - Determine where the system will discharge wastewater. Options include discharge to the sanitary sewer and to the nearby waterway (ocean, bay, lake, or river). Determining where to discharge will determine what permits will be required for discharge, and what quantity of oil will be permitted in the discharge. Sanitary sewer discharge must be permitted by the local sanitary sewer system. Discharge to the nearby waterway is regulated by the Regional Water Quality Control Board of the State Water Resources Control Board (see Appendix #7 to find your local Regional Board).
 - Determine which pump and oil-water separation systems will be used, and where segregated oil will be collected. Develop plans for plumbing, electrical, and other installation needs – some marinas hire engineers or consultants to develop these plans.

- Determine how on-going maintenance will be conducted (i.e. who will perform the maintenance and who will pay for it).
 - Determine how the bilge pump will be operated. In most cases, marina or fuel dock staff operate the system due to the need, for most systems, to prevent soaps and emulsifiers from entering the system. Some marinas allow boaters to operate the system, in most instances, once they have received a demonstration.
- 2. Absorbent Pad Distribution and Collection Programs.** In marinas where contaminated bilges are rarely a problem, or where a bilge pump-out service is available nearby, marinas should consider providing boaters access to oil-absorbent materials for the bilge and other areas where spills and discharges might occur. Some recommendations for absorbent pad programs include:
- Install an oil-absorbent pad distribution system (for specific information about implementing such a program, refer to the Oil Absorbent Pad Disposal Fact Sheet in Appendix 8);
 - Provide collection for saturated or spent absorbent pads. Saturated oil-absorbents must be disposed of as hazardous waste in California, unless they are collected for recycling. For information about absorbent pad recycling services, consult the Oil Absorbent Pad Disposal Fact Sheet provided in Appendix #8.
 - Use marina environmental policies (sample provided in Appendix #2) and boater education strategies (addressed in section 10, page 58) to inform boaters about the need to prevent discharges of oily wastes and the location and availability of the closest bilge pump-out and absorbent pad distribution and collection services. Remember to include information about mobile bilge pump-out, steam cleaning and related services.

ABSORBENT PADS VS. BILGE PUMP-OUT SYSTEMS -Pros and Cons

		ABSORBENT PADS		BILGE PUMP-OUT
Environmental benefit		Prevents oily discharge from bilge and cleans up spills, but generates hazardous waste		Segregates oil for recycling and does not generate additional wastes.
Ease of use for boater		In bilge, must be checked periodically. Can be messy. Proper disposal difficult. Safety concerns re: handling flammable materials and potential clogging of bilge		Most systems are easy to operate. Length of pump-out depends on system and quantity of bilge water.
Cost to marina		Usually involves cost of pads and disposal which depends on quantities (\$500-\$2000 / year)		Purchase and installation costly (\$5,000 - \$40,000). Maintenance costs (\$200 – \$800 /year).
Installation		Easy to install. Requires simple dispenser for absorbent and fire-proof drums on pallet for collection.		Depends on system. Generally requires connection to used oil collection tank and sanitary sewer.
Space needed		Very little.		Typically requires space for holding tank, processing unit, and used oil collection tank.

Maintenance		Very little system maintenance. Manifesting and other record-keeping required.		Typically requires filter replacement and parts maintenance.
Applications		Versatile, spill prevention during maintenance and fueling, and in the bilge.		Limited to use for oily bilge waste.
Permits		Depends on jurisdiction.		Depends on jurisdiction and system.

 = undesirable  = moderately desirable  = highly desirable

- ♦ **Offer spill-proof oil changes.** Marinas can offer an oil-change service that provides a closed system for evacuation of used motor oil from the crankcase, transfers the used oil to a collection tank for recycling, and fills the crankcase with new oil. This service will decrease spills and incidents caused by boaters that change their own oil. There are two ways to offer this service:
 1. **Install an oil-change system at your marina.** Consider offering this as a free service and charging only for the new oil, or charging only a nominal fee. By keeping the price low, you will attract boaters that normally change the oil themselves.
 2. **Contract with a mobile boat-to-boat oil change service.**
 3. **Offer the use of portable spill-proof oil change equipment.** Another way to minimize spills caused by do-it-yourself oil changers is to purchase inexpensive portable oil change equipment and make the equipment available on a lending basis.
 3. Require the use of spill-proof oil change equipment by do-it-yourself oil changers as a condition of the slip rental.
 4. Purchase inexpensive oil change equipment that uses a manual or electric pump to evacuate oil to a closed container for oil transfer. Costs range from \$50 -\$150 per unit.
 5. Advertise the oil evacuation equipment lending program using boater education strategies suggested in section 10, page 58. Use a sign-out system for lending the equipment.
- ♦ **Advise boaters about soap-less bilge cleaning techniques, including preventive engine maintenance, using oil absorbent materials, and steam cleaning services to rid a bilge of an oily mess.**
 1. Use marina environmental policies (sample provided in Appendix #2) to indicate that applying soaps to an oil sheen is illegal.
 2. Use boater education techniques (see section 10, page 58) to encourage boaters to practice preventive engine maintenance and soap-less bilge cleaning techniques. See “What Boaters Can Do” for tips that you can provide to your customers.

HOW TO FACILITATE PROPER DISPOSAL OF OILY WASTES

- ♦ **If boat oil changes are common in your marina, provide used oil recycling.** Providing convenient used oil collection facilities helps boaters to properly dispose of (i.e. recycle)

used oil. Used oil includes used vessel crankcase oils, engine lubricating oils, transmission fluids, gearbox and differential oils, hydraulic oils, and gear oils, among others. Check with the used oil recycler to determine which of these wastes can be combined in the collection tank.

1. **Contact your local Certified Unified Program Agency (CUPA) to determine how local hazardous waste generator regulations will apply to your operations.** For a list of CUPAs, see Appendix #9. For general information about managing used oil and oil filters, see Appendix #10.
 2. **Investigate grant and funding opportunities available for used oil recycling, and programs that result in used oil collection.** See section IV for more information about the California Integrated Waste Management Board (CIWMB) used oil collection program, which provides grants, through local government, for oil-related services, such as used oil collection, bilge pump oil separation systems, absorbent pad distribution and collection programs, and oil change and collection services.
 3. **Find a used oil recycler.** For a list of hazardous waste haulers and recyclers, check the Department of Toxic Substances Control (DTSC) Registry, consult the Information and Resources provided in section IV.
 4. **Provide clearly labeled, separate tanks or containers for disposal of used oil and oil filters.**
 - All tanks or containers used to store used oil should have secondary containment.
 - It is advisable to place collection tanks or containers in a storage shed to prevent rain from causing spills, rusting, or weathering.
 - The surface on which the containers are stored should be impervious to spills of used oil.
 - Curbs, berms, or other barriers constructed around collection tanks help to contain spills.
 - Follow the regulations of your local CUPA for accumulation, storage, transportation and labeling. For more information, see Appendix #9.
 5. **Make storage and disposal areas for used oil and oil filters easily accessible for boaters.** Options for increasing accessibility include:
 - keep used oil collection tank unlocked and pay higher costs of disposal for contaminated loads;
 - become a “certified” used oil collection center and receive up to \$5,000 per year for one load of contaminated waste disposal from the CIWMB (for more information about becoming a “Certified Center” refer to Appendix #6, Funding Sources;
 - have marina staff available for collection of used oil from boaters;
 - give tenants a key or code to a locked container or shed containing the oil tank;
- ◆ **If your marina does not provide used oil collection services, inform boaters of the location of local hazardous waste and used oil collection facilities.** Provide the 1(800) CLEANUP hotline and local waste recycling information numbers, which help to identify the locations of local used oil recycling and hazardous waste disposal facilities.

HOW TO MINIMIZE FUEL DISCHARGES

- ◆ **Promote the installation and use of fuel spill prevention devices by boaters.** Use education (see methods described in section 10, page 58). and/or marina environmental policies (sample provided in Appendix#2). Such devices include:

1. Fuel/air separator installed in the air vent on a built-in fuel tank;
2. Fuel gauges with whistles to let the boater know the tank is nearly full;
3. Absorbent collars or “doughnuts” encircling fuel filler nozzle to catch “splash back” spills ;
4. Spill containers attached to the outside of the air vent to catch spills caused by back-pressure build-up; and
5. For outboard tanks, spill-proof nozzles on portable fuel cans.

The following suggestions apply if you operate a fuel station:

- ◆ **Supervise fueling to prevent spills.**
 1. One option is to have a trained attendant at the fuel dock to oversee or assist with fueling.
 2. Provide spill-proof fueling training to fuel dock operators and boaters that self fuel.
 3. If boaters self-fuel, train fuel dock attendants to observe carefully the fueling practices of boaters and to instruct customers who fuel their vessels in spill prevention.
- ◆ **Provide oil absorbents to boaters for catching fuel drips and spills and provide proper collection of saturated absorbent pads.** Once saturated with oil or fuel, absorbents are treated as hazardous waste in California and must be disposed of properly.
 1. Provide secure collection of used absorbents (see Oil Absorbent Disposal fact sheet in Appendix #7). Due to the flammable nature of fuel-soaked absorbents, any facility that distributes absorbents should also provide secure collection for used absorbents.
 2. If you don’t collect spent absorbent materials, make sure you provide boaters with information about the closest disposal facilities for absorbents and other hazardous wastes. Call 1(800)CLEANUP for a list of local hazardous waste disposal facilities..
- ◆ **Provide other fuel spill prevention devices for sale at the fuel dock or marina chandlery.** These devices (whistles, gauges, fuel/air separators, spill-proof attachments, and absorbent collars for the fuel nozzle) can be made available at the fuel dock or marina chandlery and fuel dock operators can promote their use by boaters through policies and education.
- ◆ **Maintain fuel transfer equipment.** Regularly inspect transfer equipment and hoses for deterioration and fix or replace all deteriorated parts immediately.
- ◆ **Educate fuel dock attendants and users about fuel spill prevention methods.** Consult section 10, page 58 for boater education methods. The “What Boaters Can Do” section provides tips for boaters who self-fuel.
- ◆ **If you operate a small craft refueling facility, check with the Department of Fish and Game about their certification program.** See Applicable Laws and Regulations, below, and the Information and Resources provided in Section IV.

PREPARE TO RESPOND TO OIL SPILLS

◆ **Maintain an adequate supply of oil spill response materials on-site.**

1. Store a quantity of oil spill retention and containment materials (booms and absorbents) adequate to isolate a spill within marina waters and prevent oil migration beyond the marina. As a standard rule, for every foot of boat, expect to use three 3 of absorbent boom. A marina should have at least enough boom material to adequately encircle the largest boat in the marina (Rhode Island Sea Grant, *Environmental Guide for Marinas*).
2. Materials should be stored in an area where they can be quickly and easily deployed.
3. Materials should be stored in an enclosed shed, container or bin.
4. Some marinas choose not to lock the storage area for oil spill response materials. This allows easy access for anyone addressing an oil spill and promotes quick response. However, for some marinas, vandalism may be a problem.
5. Train staff in oil spill response and prevention techniques for work conducted on marina premises (see page 17 for information about training for spill response.)

◆ **Develop an oil spill response plan.** The plan should be short with clear directions that employees will understand. The plan should be clearly labeled and easily within reach of employees. It should be communicated to employees by training, as described in section II, page 17. The elements of an oil spill response plan should identify the following (Rhode Island Sea Grant, *Environmental Guide for Marinas*):

Who- Clearly identify who is responsible for taking what action.

What – What action should be taken includes what equipment should be deployed, who should be notified. A list of reporting numbers should be included in the Plan, including local CUPA agencies (see Appendix #9), state agencies via 1(800)OILS911, and federal agencies via 1(800) 424-8802.

When – When additional resources should be called for assistance. Emergency response companies are available in California, which can help both in the planning for response, and the actual response. Also, when the storage of emergency response materials will be inspected and, when necessary, replaced. It is advisable to have maintenance schedule for equipment.

Where – Where the material is located at the facility (and what types of material) and sources for obtaining additional material, if necessary.

How – Explain how the equipment should be used and disposed of. It is advisable to conduct drills for emergency response in order to be adequately prepared.

◆ **Train marina staff in proper oil and chemical spill reporting procedures.**

◆ **Post federal and state reporting phone numbers for oil and chemical spills.** The federal spill reporting hotline is (800) 424-8802; the state reporting phone number is (800) OILS911. Post the reporting phone numbers prominently around the marina.

What Boaters Can Do

Preventive Engine Maintenance

- Keep the engine well-tuned and operating efficiently.
- Practice preventive engine maintenance. Inspect fuel lines, hoses, hydraulic lines, valves, oil seals, gaskets and connections for deterioration and leaks. Fix leaks and replace deteriorated parts. When replacing hoses, new sections should be the right length to prevent damage and leaks. Properly secure lines and hoses to prevent chafing, abrasion and damage.
- Choose Coast-Guard-approved alcohol resistant fuel-lines.
- Install drip pans under all equipment that might leak.
- Avoid using solvents or toxic chemicals to clean engine parts. Use mechanical means (such as hand-scraping caked oil) or less toxic solvents (water-based). Don't let solvent run into the bilge.
- Transfer and remove fluids with care, using funnels, pumps, and absorbents to eliminate drips and spills and to keep the bilge area clean.

Bilge Care and Preventing Oil Spills

- Never use soaps or detergents to clean oil or fuel – it is illegal and increases the pollution problem.
- Install an on-board bilge filtration system that filters gas, oil or diesel from bilge water before the automatic pump discharges the water.
- Use oil-only absorbents in the bilge, securely fastened to prevent clogging the bilge pump or its sensor, to capture unexpected leaks.
- If you have a large quantity of oil in the bilge, use the bilge pump-out system located at _____.
- Never use the sewage pump-out for the bilge.
- If the bile and/or engine compartment still need significant cleaning after bilge pump-out, use a steam cleaning service.

Report Oil and Chemical Spills

- If you see or cause a spill, don't apply soaps to disperse the sheen (it's illegal).
- Report spills of oil or chemicals to (800)424-8802 and (800) OILS911 and to the marina office.

Spill-proof Your Oil Changes and Recycle Used Oil

- If you change the engine oil yourself, use a closed system – a portable vacuum oil change pump drained into a container that can be closed to prevent spills during transfer of oil.
- Do not mix used oil with other wastes. Keep it segregated for recycling.
- Recycle used motor oil and oil filters at the used oil recycling facility located at _____ or other locations, which can be located by calling (800)CLEANUP.
- Always keep oil-only absorbents on-hand to wipe up spills.
- Saturated oil-absorbents are hazardous wastes and must be disposed of at the absorbent pad disposal area located at _____ or at a hazardous waste disposal facility. Locations can be identified by calling (800)CLEANUP.

Use Safe, Spill-Proof Fueling Practices

- SAFETY: Prevent fires by shutting off motors, lights, and electrical equipment. Extinguish cigarettes and any other sources of ignition. Keep fuel-soaked absorbents away from sources of ignition. Close doors, hatches, ports, and entryways and turn off blowers.
- Maintain nozzle contact with the fill pipe to prevent static spark and spills.
- Fill tanks slowly to prevent overflows from the air vent. Avoid “topping off” the tank.
- Don’t rely on the automatic shut-off nozzle to prevent spills; they don’t shut-off in time.
- Know the capacity of your tank and leave it at least 5% empty because fuel expands.
- Hold absorbent sheet under the nozzle to catch drips, and properly dispose of fuel-soaked absorbents as hazardous waste.

Fueling Built-In Tanks

- Attach a fuel spill container to cover the air vent and catch spills (if available).
- Install fuel-air separator in air vent line to prevent spills or “splash back.”
- When fueling, keep your hand at the air vent or listen – air gushes when nearly full.
- At the end of boating season, leave tank full to reduce corrosion and condensation. Add fuel stabilizer to prevent stale gas.

Fueling Outboard Engines

- Fuel on land whenever possible.
- Use funnels to fill portable tanks, or spill-proof portable containers, and keep “oil-only” absorbents on hand to catch spills.
- Prevent stale-gas by leaving fuel tank empty during long-periods of inactivity.

4. Hazardous Waste Management

The Problem

Boaters use many products to clean and maintain their boats. All of these products can result in spills during use and leftover products that require disposal. Typical hazardous wastes resulting from maintenance and cleaning include: antifreeze, lead-acid batteries, and used oil and oil filters oil-saturated absorbents, antifreeze, batteries, solvents, paints, zincs, varnish and other finishes, and cleaning products. Hazardous wastes need to be disposed of at a hazardous waste disposal facility or collection event.

Without access to convenient hazardous waste disposal facilities, marina tenants may accumulate these wastes in dock boxes, improperly dispose of them in the trash dumpster, or leave them lying on the docks or near marina maintenance facilities. Improper disposal is not only illegal, but can result in spills and discharges for which a marina is potentially liable.

What Marinas Can Do

The following recommendations are “implementation options” that are suggested for addressing the problems outlined above. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations. Therefore, there is no one-size-fits all strategy for addressing the environmental problems. A marina operator should choose the strategies for managing a clean marina that are workable and most likely to result in the maximum environmental benefits.

- ◆ **Determine whether particular wastes are hazardous.** A waste is hazardous if it exhibits one or more of the following characteristics: ignitability, corrosivity, reactivity, or toxicity. All waste generators must determine whether or not a waste is hazardous. A generator may either have the waste tested to determine if it exhibits one of the characteristics, or use knowledge of the waste, i.e. first-hand experience or information gathered from a Material Safety Data Sheet. The test for toxicity is called the Toxicity Characteristic Leaching Procedure and is performed by testing laboratories. For more information about hazardous waste determination, refer to the fact sheet on Hazardous Waste Generator Requirements provided in Appendix #11.
- ◆ **Ask local government (the CUPA) to provide hazardous waste collection for your facility.**
 1. Contact your local CUPA to determine whether special boater hazardous waste collection programs can be established at your facility by the CUPA. Some local jurisdictions provide hazardous waste collection for Conditionally Exempt Small Quantity Generators (CESQGs). If your facility generates a small enough quantity of hazardous waste, you can be considered a CESQG. In these cases, the marina has an EPA generator ID number, but the county provides the collection. Contact information for local CUPAs is provided in Appendix #9.

2. Some local jurisdictions provide hazardous waste collection events for CESQGs.. For CESQGs, the marina has an EPA generator ID number, but the county provides the collection.

◆ **Install hazardous waste collection facilities at your marina.**

1. **Contact your local CUPA (or if none available, the DTSC) for information about local hazardous waste management regulations.** In general, CUPA regulations are similar to those set forth under the California Health and Safety Code and the California Code of Regulations. A list of CUPAs in California is provided in Appendix #9. See the Applicable Laws and Regulations, below.
2. **Obtain an EPA Hazardous Waste Generator Identification Number.** The number identifies each handler on hazardous waste manifests and other paperwork. It enables regulators to track wastes from “cradle to grave.” For more information about identification numbers, consult the Fact Sheet on EPA Identification Numbers provided in Appendix #12 and contact your local CUPA (Appendix #9).
3. **Generators shipping more than 50 lbs/5 gallons of hazardous waste must follow DTSC requirements.** Only transporters and transfer, treatment, storage and disposal facilities that are registered or permitted by DTSC and have obtained an ID number can be used; the shipment must comply with Department of Transportation requirements for packaging, labeling, and placarding; a California Hazardous Waste Manifest must be used; and manifest tracking and reporting requirements must be followed. For more information regarding the shipment and transport of hazardous wastes, see the DTSC Fact Sheet on Hazardous Waste Generator Requirements provided in Appendix #11, contact your local CUPA (Appendix #9), and consult the Applicable Laws and Regulations below.
4. **Segregate hazardous wastes for recycling and disposal and keep them stored in proper containers.** Antifreeze, solvents, lead-acid batteries, and zinc-anodes can be recycled.
 - Segregate these wastes in separate collection containers.
 - Do not permit other wastes (including oil, gasoline, pesticides, cleaners, paints and varnishes) to be mixed with these wastes.
 - To prevent co-mingling, use signs and educate boaters about which wastes go in which containers, or have boaters give wastes to marina staff for disposal.
 - Special requirements apply to wastes collected in tanks, such as daily inspection, proper labeling, and secondary containment. For information regarding proper containment and location of containers, refer to the DTSC Fact Sheet on Hazardous Waste Generator Requirements provided in Appendix #11 and contact your local CUPA.
5. **Make sure hazardous wastes are accumulated in compliance with applicable time limits.** For more information about accumulation time limits and quantities, refer to the DTSC Fact Sheet #13, contact your local CUPA (Appendix #9), and the Applicable Laws and Regulations provided below.

6. **Containers must be properly labeled.** Labels should indicate: the date upon which each period of accumulation begins, the words “hazardous waste,” the composition and physical state of the waste; a statement regarding the particular hazardous properties of the waste (i.e. flammable, reactive); and the name and address of the generator. For more information labeling requirements, consult the Hazardous Waste Generator Requirements Fact Sheet provided in Appendix #11 and contact your local CUPA (Appendix #9)
 7. **Use a Reputable Waste Hauler.** In the “cradle to grave” system of waste management, generators can be liable for wastes improperly disposed of by transporters. Check that the hazardous waste hauler you choose has the required permits and follows the regulatory requirements for transporters mentioned in Appendix #11 and the Applicable Laws and Regulations, below. Check with your local CUPA (see Appendix #9) for lists of reputable waste haulers in your locale.
 8. **Conduct emergency response planning for hazardous waste releases.** Hazardous waste generators must comply with emergency procedures, contingency plans, and staff training requirements pertaining to generators of less than 1000 kg/month of hazardous waste, and separate requirements for generators of more 1000 kg/month or more. For information about these requirements, refer to the fact sheet provided in Appendix #11, your local CUPA (Appendix #9), and the Applicable Laws and Regulations below.
- ◆ **If your marina does not collect hazardous wastes on site, inform tenants, visitors, and staff about the local hazardous waste disposal facilities and locations.**
 1. Call the local CUPA or 1(800) CLEANUP for the locations of local hazardous waste disposal facilities.
 2. Publicize this information through marina environmental policies (see Appendix #2) using the boater education strategies described in see section 10, page 58.
 - ◆ **For information about the collection of spent lead-acid batteries, refer to the DTSC Fact Sheet on Management of Spent Lead-Acid Batteries provided in Appendix #14.**
 - ◆ **Educate boaters to avoid using products likely to generate hazardous waste.** Use boater education techniques described in section 10, page 58 and in marina environmental policies (sample provided in Appendix #2).
 - ◆ **In maintaining the marina, limit use of materials that can become hazardous wastes.** Check the Material Safety Data Sheet (MSDS) provided by the product manufacturer to determine whether the products you are using are corrosive, reactive, toxic, or flammable. If so they are considered toxic substances and it would be preferable to seek less-toxic alternative products.

What Boaters Can Do

- Find the hazardous waste disposal facility nearest you or your boat. Check with your marina and/or call (800)CLEANUP.

- Keep recyclable hazardous wastes segregated from other wastes and bring them to a hazardous waste disposal facility. Recyclable hazardous wastes include lead-acid batteries (many retailers will accept your old battery for recycling), used oil, oil filters, antifreeze, and zincs.
- Review storage of products every six months and properly dispose of old or unnecessary products.
- Lead-acid batteries: retailers should accept the old battery for disposal when you purchase a new one. Check with your marina, they may accept old batteries for proper disposal.
- Antifreeze: ask your marina or local hazardous waste disposal facility to recycle used anti-freeze.
- Transmission fluid: ask the oil recycling facility that you use if it can be mixed with used oil for recycling.
- Zincs: take old zinc anodes to a scrap metal recycler. Some will pay for your old zinc anodes.

5. Trash and Marine Debris

The Problem

- **Wasting Resources**

In the year 2000, U.S. residents, businesses, and institutions produced nearly 232 million tons of solid waste (trash), which is approximately 4.5 pounds of waste per person per day (up from 2.7 pounds per person per day in 1960). Recycling, including composting, diverted 69.9 million tons (approximately one third of solid waste generated) of material away from landfills and incinerators in 2000 (US EPA website). Recycling prevents the emission of many greenhouse gases and water pollutants, saves energy, supplies valuable raw materials to industry, creates jobs, conserves resources for the future, and reduces the need for new landfills and incinerators. In 2000, recycling resulted in an annual energy savings of at least 660 trillion BTUs, which equals the amount of energy used in 6 million households annually (US EPA website). With residential recycling programs in place in most communities in California, establishing recycling programs at public and private facilities, such as marinas, is a current challenge. Convenience is a major factor in determining whether or not boaters will recycle their waste.

- **Impacts of Aquatic Debris**

Plastics and other types of product packaging, fishing gear, and disposable consumer goods sometimes end up in both inland and coastal waterways. In some areas, recreational boats and fishing vessels have been found to be a major contributor to the problem. A study of the seafloor of the near coastal waters of southern California (the mainland shelf of the southern California bight) conducted in 1994 found that the primary sources of man-made debris in the research area were marine vessels and fishing activity (Moore, 2000).

The impacts of marine debris on beach water quality, marine mammal fatalities, and human health are only beginning to be understood. However, many studies have shown that fish, turtles, birds, and marine mammals die in alarming numbers due either to ingestion or entanglement of plastic and other marine debris (Laist, 1997). Surveys of fisherman and boaters indicate that plastics, trash, and fishing debris has caused significant damage to vessels and poses serious threats to boater safety by snaring propellers and fouling engine intake systems. In a survey conducted in Newport, Oregon, 58 % of the fishermen indicated that they had experienced vessel problems due to plastic debris and incurred an average expense of \$2,725 per vessel. A similar study in Seattle Washington in 1987 revealed that 64% of the fisherman interviewed had experienced vessel problems due to plastic debris and had incurred an average cost of \$1910 for repairs and lost fishing time (Recht, 1988).

What Marinas Can Do

The following recommendations are “implementation options” that are suggested for addressing the problems outlined above. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations. Therefore, there is no one-size-fits all strategy for addressing the environmental problems. A

marina operator should choose the strategies for managing a clean marina that are workable most likely to result in the maximum environmental benefits.

◆ **Encourage boaters to stow goods securely on-board to prevent accidental overboard discharge of debris.**

1. Use boater education methods, described in section 10, page 58, to encourage boaters to “stow it, don’t throw it.” See other tips you can provide boaters to prevent marine debris in the “What Boaters Can Do” section.
2. Use marina environmental policies (a sample is provided in Appendix #2) to prohibit or discourage the discharge of litter and other debris.

◆ **Provide adequate and convenient garbage collection facilities.**

1. Make trash disposal easy and accessible by placing receptacles near areas of heavy use, such as parking lots, restrooms, laundry facilities, docks, picnic areas, and restaurants and shops.
2. Make sure garbage is collected frequently enough to ensure that collection receptacles do not get overloaded, and pick up debris before it gets in the water.
3. Make sure the trash receptacles are covered.
4. If you decide not to provide trash and recycling collection, post signs that ask people to “Pack it out!” (EPA 2001).

◆ **Provide convenient recycling facilities for solid waste (fishing line, plastic, glass, aluminum, paper).** Not all of these wastes are recycled in each municipality; therefore, it may not be possible to have all these wastes collected. Funding for solid waste recycling can be obtained from the Department of Environmental Conservation (see Appendix #6).

1. Make sure the pick-up of recyclables collection containers occurs often enough to prevent overflow.
3. Maintain recycling bins with lids and pick up debris before it gets in the water.

Consider providing trash receptacles and recycling facilities at boat launch ramps.

Facilities for trash disposal and recycling are often lacking, or inadequately serviced at boat launch ramps, although the ramps are the primary access and egress point from the water for most boaters.

◆ **Inform boaters that hazardous wastes (oil, paint, batteries, etc.) should not be disposed of in trash receptacles.** Post signs on dumpsters to inform users about the location of the most convenient household hazardous waste disposal facilities.

◆ **Establish recycling for plastic shrink wrap, if this is a significant source of waste at your facility.** The use of shrink wrap is becoming increasingly popular in the boating world. Most often it is associated with the protection of new boats at boat dealerships from dirt and weathering, and shrink wrap is increasingly used to winterize boats by keeping out moisture and prevent freezing. Marinas with large quantities of shrink wrap collecting in their trash can contract with companies that take bails of plastic wrap and turn it into plastic lumber or other secondary plastic products. Check www.calMax.org to find a recycler that may take plastic shrink wrap.

- ◆ **Establish recycling for fishing line and netting.** Pure Fishing, the parent company of Berkley Fishing, sells new nylon monofilament fishing line and collects used fishing line for recycling at no charge. They recycle it into secondary materials, including their own “Fish Hab,” a fish habitat structure. Marinas, chandleries, and tackle shops can obtain cardboard recycling containers at no cost from Pure Fishing (the parent company of Berkley, see Information and Resources, section IV). These are about 3’ tall and about 17” wide and 17” deep. The display holds 2 cardboard boxes; one for fishing line and the other for spools. Both boxes have UPS postage-paid labels. When they are full, they are taped shut and can be picked up by UPS for shipping back to Pure Fishing for recycling. Pure Fishing is willing to send out quantities of these to individuals who are starting recycling programs. Boaters can also send their used fishing line **directly to them (see Information and Resources, section IV).**

- ◆ **Encourage the use of non-disposable products, rather than plastic and polystyrene cups, polystyrene and plastic food containers, plastic utensils, and other disposable goods.**
 1. Use non-disposables at marina-based food vending locations, if possible.
 2. Use marina environmental policies (appendix #2) and boater education (see section III, page 58) to communicate the marina’s waste reduction goals to tenants.
 3. If you use or sell disposable products, choose those made from biodegradable and recycled materials.

- ◆ **Encourage waste reduction in the marina office.**
 1. Use recycled paper, and recycle office paper.
 2. Make double-sided copies.
 3. Use non-disposable utensils and cups to serve food, coffee, and beverages.

What Boaters Can Do

- Don’t dump plastics and trash overboard. It’s illegal to discharge plastic anywhere in the ocean or in inland waterways.
- Bring it all back. Properly stash all containers and trash on-board to prevent it from being blown overboard.
- Designate a permanent onboard trash bin. Use a container with a lid.
- Help guests understand that on your boat, no trash is thrown overboard.
- Put empty cans back in your cooler to recycle ashore.
- Remove product packaging at home to eliminate space-consuming packaging waste on-board.
- Find ways to reduce the amount of garbage you create while aboard your boat. For example, take food from home in reusable containers rather than plastic food bags.
- Bring used monofilament fishing line back to recycling bins at your marina or tackle shop, or send it directly to: **Berkley Recycling Center, 1900 18th Street, Spirit Lake, IA 51360-1099.**

6. Grey Water Minimization

The Problem

Grey water is the soapy waste water from boat cleaning, on-board sinks, showers and laundry machines. These discharges are generally directly discharged from boats to surrounding waterways. Detergents and other cleaning products contain surfactants designed to release surface tension. These surfactants can accumulate at the water surface resulting in lower dissolved oxygen concentrations in water, which can harm aquatic life (EPA National Management Measures, p 2-4). The phosphates and detergents contained in the waste water increase biological oxygen demand, which at certain levels may deprive fish and aquatic organisms of oxygen necessary for survival, and add nutrients that lower dissolved oxygen (Virginia Clean Marina Guidebook, p.37).

What Marinas Can Do

The following recommendations are “implementation options” that are suggested for addressing the problems outlined above. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations. Therefore, there is no one-size-fits all strategy for addressing the environmental problems at California marinas. A marina operator should choose the strategies for managing a clean marina that are workable and most likely to result in the maximum environmental benefits.

- ◆ **Inform boaters that grey-water cannot be legally discharged in an EPA-designated no-discharge area** through marina environmental policies (see Appendix #2) and boater education (see section III, page 58).
- ◆ **Make shower, dishwashing, and laundry facilities available.** If your marina has a live-aboard community this practice is especially important. In addition, if the marina has enough boats that have galleys, showers, and laundry facilities, it is also important to provide shore-side facilities and to encourage boaters to use them instead of on-board facilities.
 1. Site these facilities for ease of access, comfort, and convenience.
 2. Make sure these facilities are safe for tenants. If public access may create an unsafe or uncomfortable situation for your tenants, limit access using a combination or key card system.
 3. Maintain these facilities so they are clean and functional.
 4. Post signs at the facilities that stress the importance of using shore-side facilities to limit the environmental impacts of grey water discharge from boats.
- ◆ **If sinks, showers, and laundry facilities are not available in the marina, encourage boaters to save showers, laundry, and dishwashing for home .** Use marina environmental policies (see sample in Appendix #2) or boater education strategies (as provided in section III, page 58) to encourage these habits.
- ◆ **Minimize the amount of grey water generated by top-side boat cleaning and maintenance.** Use boater education tips provided below to educate tenants about strategies for minimizing greywater discharge associated with top-side boat cleaning.

What Boaters Can Do

- Soaps from boat sinks, showers, and dishwashers are more harmful than those at home because they don't get treated in a sanitary sewer system when discharged from your boat. Do as much cleaning at shore-side facilities as possible.
- Choose phosphate-free biodegradable soaps.
- Use more "elbow grease" and as little cleaning product as possible.
- Rinse and scrub your boat with freshwater after each trip.
- Tarps and canvas boat covers reduce the amount of cleaning you need to do and therefore the need for boat soaps and cleaners.
- Use canvas boat covers to keep boat clean between trips and reduce the amount of cleaning you need to do.

7. Fish waste management

The Problem

Fish waste is not always a problem. Frequently, other fish, birds, and marine mammals eat fish wastes. However, in marinas where waters are not adequately cleansed by tidal flushing or where charter boat fishing operations, commercial fishing, or high levels of recreational fishing activities occur, fish wastes can accumulate. Under certain conditions, discharges of significant quantities of wastes from fish cleaning operations into marina waters can consume large quantities of dissolved oxygen and cause anaerobic, foul-smelling conditions. Natural, decomposing fish parts can pollute the water by depleting oxygen necessary for aquatic life and can create an unsightly slough of floating fish parts.

Squid fishing operations pose a particular problem in terms of the biological degradation associated with the discharge of transport seawater (“stick water”). The products associated with transport seawater, such as slime, ink and other biological materials related to the harvest and delivery of California Market Squid (*Loligo opalescens*) accumulate in seawater tanks used in squid transport to shore for offloading. This stick water, if discharged into poorly flushed bays and harbors, can cause oxygen depletion with potential serious impacts to water quality.

What Marinas Can Do

The following recommendations are “implementation options” that are suggested for addressing the problems outlined above. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations. Therefore, there is no one-size-fits all strategy for addressing the environmental problems. A marina operator should choose the strategies for managing a clean marina that are workable and most likely to result in the maximum environmental benefits.

- ◆ **Marinas with significant fishing activities and fish wastes should consider installing fish cleaning stations at marina and boat launch ramps.** A fish cleaning station is a particular area set aside for cleaning fish. It typically includes a cutting table, a freshwater hose (or several), and receptacles for fish waste. Fish cleaning stations should be identified with signs and should include instructions for proper fish waste management.
- ◆ **Boaters and fishers should be informed of the location of the fish cleaning station.** See boater education (see section III, page 58) for ways to inform boaters of the location.
- ◆ **Disposal of fish wastes into marina waters should be discouraged where marina waters experience limited flushing, where a concentration of fish wastes are likely to cause oxygen depletion, or where the activity may result in unsightly floating fish wastes.** Marinas can discourage discharge of fish wastes into marina waters through marina environmental policies (sample provided in Appendix II) and through education methods described in section III, page 58 .
- ◆ **Provide proper fish waste disposal.** Where fish cleaning stations exist, boaters should be discouraged from discharging fish parts into marina waters, unless there is adequate tidal flushing or the number of users is small enough that the impact will not be significant.

1. Fish waste can be discharged through sanitary sewer in some jurisdictions. If the marina is on a sewer line, and if the local sanitary sewer district approves the discharge, install a heavy duty garbage disposal (a grinder) at the fish cleaning station. Facility users will have to cut fish wastes into pieces small enough to be processed by the grinder.

2. Fish waste can be composted.

- Implement fish composting where appropriate.
- Investigate whether your local landfill has composting operations and will accept fish wastes, or whether local composting services will collect fish wastes from your facility.
- Information about fish waste composting is provided in Appendix # .

3. Small volumes of fish waste can be disposed of in the trash.

- Large volumes of fish waste should not be disposed of in the trash. If small volumes of fish waste are disposed of in the trash, it should be kept in separate closed containers designated for fish wastes only in order to control odors, rodents, and flies.
- Very small quantities of fish waste can be placed in plastic trash bags, tied close, and deposited into the marina dumpster or taken home for disposal by fishers.

◆ Encourage squid boat operators to:

1. Catch and return all water transported with squid during pumping operations back to a vessel or container for disposal outside of the harbor.
2. Keep bins, holds, pumps, and other equipment covered to discourage birds.
3. Continuously wash down off-loading work areas.
4. Wash down the area surrounding the unloading operations to avoid the transfer of squid solids and fouling of other areas. This wash-down includes the roadway in the harbor business area if spillage occurs.
5. Wash down with water and squeegee adjacent roadways before leaving for the day, if any spillage occurs. Absent any spillage, any adjacent concrete roadway should be washed and squeegeed at least twice per week.

8. Boat operation

The Problem

Boat traffic through shallow-water areas and in near-shore areas at wake-producing speeds can stir up bottom sediments, uproot aquatic vegetation, erode shorelines, and harm some marine animals that dwell in these areas. Instead of recycling nutrients released from decomposing matter, uprooted vegetation adds more nutrients to the water body as it decomposes, which creates further oxygen demand and degrades water quality. The loss of aquatic vegetation can also contribute to shoreline erosion.

Erosion and sedimentation along shorelines increases turbidity in the water column, which prevents sunlight from penetrating to the lower depths. The lack of light leads to habitat destruction and diminished dissolved oxygen concentrations. The resuspension of sediment caused by boat wakes and turbidity can stir up pollutants in the bottom sediments. These pollutants can be ingested by fish and shellfish and work their way up the food chain. In addition, fish have a harder time finding prey in turbid waters. Plants and bottom dwelling organisms can become covered by resettling sediments (EPA National Management Measures, p. 4-95).

Recreational boats can spread “aquatic nuisance species” when boats or equipment are moved from body of water to another or when unused bait is dumped into a water body that differs from the one where the bait bucket was filled. In California, exotic species of concern for boating include: water hyacinth, Eurasian water milfoil, giant salvinia, brazilian egeria, ginat reed, tamarisk, purple loosestrife, spartina, mitten crabs, European green crabs, New Zealand mudsnails, New Zealand sea slug, the American Bullfrog, Asian clams, and the common carp. These plants and animals that are released, intentionally or unintentionally, into non-native waters can harm native species by eating their food, preying on them, transmitting disease, or outgrowing them. Often they are released into areas where their native predators do not exist, so they thrive and irrevocably alter the ecosystem into which they were introduced (Owens-Viani 2001).

What Marinas Can Do

The following recommendations are “implementation options” that are suggested for addressing the problems outlined above. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations. Therefore, there is no one-size-fits all strategy for addressing the environmental problems at California marinas. A marina operator should choose the strategies for managing a clean marina that are workable and most likely to result in the maximum environmental benefits.

- ◆ **Protect seagrass beds and bottom habitats in shallow water areas from destruction by boat traffic by creating areas that are “off-limits” to boat traffic of any type.** Use signs and/or buoys in the water around the edges of these areas to indicate the area is restricted. Include these areas in marina maps, and develop other boater education materials as per the recommendations of section III, page .
- ◆ **Implement reduced-speed areas to decrease turbidity, shore erosion and other damage in marinas.** For example, a 5 mile per hour limit can be posted.

- ◆ **Establish and enforce no-wake zones.** Although harder to enforce, no wake zones are more effective than speed limits in shallow surface waters for reducing turbidity and erosion caused by boat passage. Hull shape strongly influences wake formation, therefore some boats can travel fast with little wake formation and others cause large wake at slow, non-planing speeds. In shallow areas, larger waves from the wakes of “speed-limited” watercraft are more likely to re-suspend bottom sediments and create turbid waters. Marinas can and do create “no wake” zones by posting signs within marina waters (EPA Marina Management Measures, p 4-97).
- ◆ **Prohibit the dipping or dumping of bait buckets from other waterways into your marina waters.**
- ◆ **Find out what types of invasive species may be a threat to the waterways where your marina is located and report sightings of invasive species.** Learn to identify the species so that you can detect invasions early in their development. Check the Information and Resources section below for how to obtain more information about invasive species and how to report sightings.

Using boater education techniques (see section III page #), instruct boaters to follow steps to preventing the spread of aquatic nuisance species . Use the tips provided for boaters below.

What Boaters Can Do

(Owens-Viani, 2001)

1. Drain livewells, bilge water, and transom wells before leaving the vicinity of where you have used your boat.
2. After leaving the water, inspect your boat and boat accessories, and dispose of any plants or animals you find by placing them in the garbage bin.
3. Empty bait buckets on land, never into the water.
4. Never dip your bait or minnow bucket into one lake if it contains water from another lake.
5. Never dump live fish or other organisms from one body of water into another one.
6. When you get home, wash your boat, tackle, downriggers, and trailer with hot water.
7. Flush water through your boat motor’s cooling system and other parts of the boat that normally get wet. If possible, let everything dry for five days in the hot sun before using your boat in another water body.

9. Storm-water Runoff

The Problems

Storm-water runoff is rainfall that washes over the surface of the land picking up pollutants as it travels. Storm-water runoff may collect soil particles, petroleum products, metals and residues from hull cleaning operations, litter, pet waste, and general debris. These pollutants may be present on marina lands and areas adjacent to the marina as a result of vehicular traffic, equipment operation, lawn care and landscaping, and shore-side boat maintenance activities. These pollutants are carried with the runoff into surface waters where they can degrade water quality. Many existing marinas were constructed prior to any understanding of the issue of storm-water runoff pollution. As a result, some marina facilities discharge untreated storm-water directly to the marina basin (Virginia Guidebook, 2001).

Pollutants carried by storm-water impair water quality by increasing levels of nitrogen, phosphorous, suspended solids, and biochemical oxygen demand. Temperatures and levels of toxic metals and hydrocarbons tend to increase, dissolved oxygen decreases, and the acidity-alkalinity of the water typically changes. As a result, near-shore areas may be less able to support wildlife and using the water for human recreation can become less desirable.

What Marinas Can Do

The following recommendations are “implementation options” that are suggested for addressing the problems outlined above. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations at California marinas. Therefore, there is no one-size-fits all strategy for addressing the environmental problems at California marinas. A marina operator should choose the strategies for managing a clean marina that are workable and most likely to result in the necessary environmental benefits.

Marinas can be designed with storm-water pollution minimization in mind. In general, these design features may include combinations of construction features, such as, catch basins, holding tanks, retention basins, or wet ponds, to capture and/or treat storm-water. Vegetated filtering strips, swales, catch basin filters, swirl concentration systems (to remove solids), or oil-grit separators (to remove solids and oil), can help remove pollutants. Constructed wetlands, porous pavements and other practices such as infiltration trenches can be used to induce infiltration and groundwater recharge, and reduce pollutant discharge to nearby surface waters.

However, marinas that have not been specifically designed for the minimization of pollutant loading caused by storm-water runoff should consider post-design operational options for minimizing pollution caused by storm-water runoff. Because this manual is not focused on marina design, recommendations in this section are limited to operational (non-design) measures that can be implemented to minimize storm-water pollution. When considering how to minimize storm water pollution, marinas should consider runoff from:

- **parking lots, roads and paved areas;**
- **landscaped areas; and**
- **shore-side boat maintenance areas**

How to Minimize Pollutants in Parking Lot and Paved Area Run-off

◆ **Place Absorbents or filters in drain inlets.**

1. Place absorbent material or filters in drains where it can remove oil and grease and solids with any adsorbed pollutants from storm-water.
2. Clean or replace absorbent or filtering materials regularly to retain their proper function.
3. Dispose of saturated petroleum- absorbents as hazardous waste.
4. Properly and legally dispose of the absorbents and filters. Petroleum-saturated or coated absorbents and filters are considered hazardous wastes.

◆ **Install Oil-Grit Separators.**

1. Install oil grit separators in parking areas and other areas where petroleum is likely to be spilled. They can be particularly useful in areas where the work performed contributes large loads of grease, oils, mud, or sand to runoff. Application is limited to highly impervious catchments that are 2 acres or smaller.
2. Actual pollutant removal occurs only when the chambers are cleaned out. Re-suspension limits long-term removal efficiency if the structure is not cleaned out.
3. Periodic inspections and maintenance of the structure should be done at least twice a year or according to manufacturer's instructions.

◆ **Incorporate Vegetated Areas and Filter Strips.** Vegetation filters and slows the flow of surface water runoff, stabilizes shorelines, and provides wildlife habitat, flood protection, and visual diversity. A vegetated filter strip is a densely vegetated strip of land engineered to accept runoff from upstream development as overland sheet flow. It may adopt any naturally vegetated form, from grassy meadow to small forest. Locally native species are encouraged on the filter strips to minimize watering needs.

◆ **Maintain vegetated buffers (grassy or wooded) between all impervious areas (i. e. parking lots and storage areas) and the water.**

◆ **Conduct regular sweeping or vacuum sweeping of parking lots.**

II. How to Minimize Pollutants from Landscaped Areas

◆ **Adopt Integrated Pest Management Practices.** Because of their proximity to the water, marinas should consider avoiding toxic lawn and garden chemicals to the greatest extent possible. Integrated Pest Management (IPM) is a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks (National Coalition on Integrated Pest Management, 1994).

1. Check with the state or county Agricultural Extension for the latest IPM program for particular plant/pest complex.

2. Select plants that are disease and insect resistant that will out-compete common weeds, and that can thrive on your property. Refer to the California list of native plants (California Native Plant Society (916) 447-2677) or for San Francisco Bay projects contact the San Francisco Bay Conservation and Development Commission (415) 352-3600) to obtain the Bay Shoreline Landscape Guide.

◆ **Use pesticides only after all other options have been exhausted.**

1. Use organic alternatives to chemical pesticides.
2. Treat only serious and intolerable pest infestations.
3. Purchase the least toxic chemicals in the smallest amount practical.
4. Do not use pesticides just before a rainfall or on a windy day.
5. Do not apply pesticides near water, i. e. shore, wells, streams, ponds, bird baths, etc.

◆ **Limit fertilization.**

1. Apply precise amount of fertilizer in a timely manner to diminish the potential for pollution, and promote healthy disease and pest resistant plants.
2. Fertilize according to the needs of the species planted.
3. Use slow-release or organic-based formulas based on nutrient need as verified by soil testing.

◆ **Practice Water-wise Landscaping**

Reducing water use protects water quality by reducing runoff. It can also save money by reducing water use and minimizing maintenance activities.

1. Choose efficient irrigation delivery systems that water deep and deliver water prudently to reduce water needs.
2. Select plants that are suited to the existing conditions (i.e. soil, temperature, moisture and sunlight) so that they will require little care. Mulch (wood chips, bark, grass clippings, nut shells, etc) placed to a depth of 3-4" around plants keep water in the soil, prevent weeds, and reduce the amount of sediment picked up by storm-water. Planting groundcovers at the base of trees serves the same function. Group plants with similar water needs together.
3. Build healthy soils. Organic matter additions (compost, humus, leaf mold, manure, grass clippings, bark, or peat moss) can transform poor soils into a fertile growth medium that supports healthy plant growth while reducing water and fertilization requirements.
4. Plan vegetated areas with "beneficial" plants. Beneficial plants include native species and plants that require minimal care in terms of trimming, watering, and applications of fertilizer and pesticides.
5. Select perennial plants instead of annuals. Perennial plants need only be planted once, tend to shade out most weeds, and few require additional water or maintenance.

◆ **Encourage tenants and visitors to clean up pet waste and provide methods to make controlling pet wastes easier.**

1. Provide dispensers stocked with plastic bags for collecting pet wastes and providing signage that describes proper pet waste management (i.e. collect in plastic bag and throw into garbage).
2. Require that dog owner clean up after their pets.

3. Educate boaters about the need to minimize pet waste problems using educational methods described in section 10, page 58 and marine environmental policies.

III. How to Minimize Pollutants from Shore-side Boat Maintenance Areas

- ◆ **Facilities that conduct pressure wash-type bottom cleaning are required to control pollution discharges to stormwater pursuant to a NPDES permit (see Applicable Laws and Regulations). Chemical and filtration wastewater treatment systems are the methods typically used to satisfy this requirement.** There are several ways to treat waste-water from pressure-washing to remove metal contaminated paint chips and other particles that might be present.

1. **Settling** – pressure wash waste-water should be collected in a holding or settling tank which allows large particles to settle to the bottom.

To remove smaller particles, use one or both of the following:

2. **Filtration** – waste-water can be passed through one or more filters to screen out particles. Each phase of filtration should rely on smaller mesh sizes to gain additional filtration in each phase.
3. **Treatment** – it may be necessary to use chemical treatment to remove metals, oil and grease, and other contaminants. Chemical treatment usually involves the addition of chemicals (flocculants) that cause small solid particles to adhere together to form larger particles, which are then filtered from the water. This type of treatment system can remove more than 90 percent of the suspended solids and 80 percent of most toxic metals associated with pressure wash operations. The chemical additives and solid pollutants removed from the wastewater are, in most cases, regulated as hazardous wastes in California.

Many wastewater collection and treatment systems rely on a combination of these strategies.

Some systems in place in California rely on closed loop recycling of pressure wash water. That is, all waste water collected by the treatment system runs through a filtration system and is again collected into the settling tank and recirculated through the filtration system.

The solids removed from wastewater in these treatment systems must be disposed of as hazardous waste. For more information about managing hazardous waste, see Section 4, page 34.

- ◆ **Perform boat cleaning, maintenance and repair work in enclosed areas.**

1. **Perform repair work indoors.** One of the best ways to prevent stormwater discharge of debris associated with boat maintenance and repair is to do it indoors, in buildings or enclosed work areas.

2. **Where enclosed buildings or structures are not available, provide spray booths, temporary plastic enclosures, or tarp enclosures for painting and sandblasting activities.** Boat hull maintenance areas can be designed so that all maintenance activities that are significant potential sources of pollution can be accomplished over dry land allowing the collection and proper disposal of debris, residues, solvents, spills, and stormwater runoff. Tarps should be used to prevent the emissions of paint overspray, sandblasting media, and debris from boat bottoms and sanding and refinishing. Boat hull maintenance areas can be specified with signs, and hull maintenance should not be allowed to occur outside these areas. Make sure the area is well ventilated and conforms to Occupational Safety and Health Administration (OSHA) regulations.

The following recommendations apply to marina boat maintenance staff or do-it-yourselfers.

- ◆ **Clean hull maintenance areas immediately after any maintenance to remove debris and dispose of collected debris properly.** General good housekeeping can be an effective management tool for preventing the accumulation and storm-water discharge of paint chips, boat repair debris, sandblast grit, dust, dirt, litter and trash. Vacuuming or sweeping is an excellent method of collecting this debris.
- ◆ **Use vacuum sanders to remove paint from hulls and to collect debris during sanding on the topside.** Vacuum sanders capture up to 98 percent of the dust generated during sanding operations. They protect the user from potential respiratory impacts associated with sanding operations and prevent wood, paint, dust, and other debris from entering the water. Vacuum sanders reduce the time necessary for cleanup and increase the speed at which a boat bottom can be completely sanded.
- ◆ **Sweep or vacuum around hull maintenance areas, roads, parking lots, and driveways frequently.** Frequent cleanup of impervious areas can effectively prevent polluted runoff. Schedule vacuuming (e.g. once daily or every other day during boating season) and adhere to the schedule. Regular parking lot sweeping helps reduce the amount of sand, grit, and trash that reached the marina basin and stormwater controls. It also reduces the need to clean catch basins and oil/grit separators, which require periodic cleaning for efficient operation.
- ◆ **Capture pollutants from boat cleaning and maintenance activities using tarps and filter cloths.** Tarpaulins may be placed on the ground prior to placement of a boat in a cradle or stand and subsequent sanding/painting. Plastic tarpaulins will collect paint chips, sanding, and paint drippings and can be disposed of in the trash, as long as the waste collected is not hazardous. Impermeable plastic tarps do allow wind to blow dust and paint chips off the tarps, and rainwater washes debris from the tarps. Semi permeable filter cloths can be used in place of plastic tarps for collecting debris in windy conditions, as filter cloths hold onto debris better and allow water to pass through while retaining debris for later disposal.
- ◆ **Store chemicals or materials that may cause pollutant runoff in covered enclosed areas and provide secondary containment around the storage area.** Storage sheds or lockers are generally considered the most secure.

What Boaters Can Do

- Clean up pet waste and dispose in the trash.
- Minimize debris and contaminated liquids associated with boat cleaning and maintenance.
- Capture pollutants from boat cleaning and maintenance activities using tarps, filters, and vacuums.
- Properly store chemicals or materials that may leak or spill in a covered or enclosed area.

10. Boater Education

The Problems

Since marinas primarily service boaters, it is the practices of marina tenants and visiting boaters that primarily affect the environment. Therefore, in addition to providing services that support clean boating habits of boaters, educating boaters about environmentally sound boating practices is one of the most important aspects of clean marina operation. Most boaters that are aware of environmental impacts associated with their boating practices, and have access to low-cost and convenient environmental services, implement clean boating practices. It's that simple. Most boaters care about the environment, and many consider themselves to be environmental stewards.

What Marinas Can Do

The following recommendations are “implementation options” that are suggested for addressing the problems outlined above. Differences in geography, boating communities served, funding mechanisms, and management styles, cause great diversity in the character and operations at California marinas. Therefore, there is no one-size-fits all strategy for addressing the environmental problems. A marina operator should choose the strategies for managing a clean marina that are workable and most likely to result in the greatest environmental benefits.

The three most popular sources of information for boaters about operating and maintaining their vessels are the marine supply shop, boat shows, and word of mouth (Public Research Institute, 1998). Since each of these sources involves boaters obtaining information from other boaters or boating experts, “word of mouth” strongly influences boater behavior. It's all about communication.

- ◆ **Take Advantage of Existing Boater Education Materials and Programs.** Many boater education resources and services are available in California. The good news is that there is no need to start from scratch. Check the Resources and Information section below to identify materials that could be helpful to your efforts.
- ◆ **Adopt a clean marina attitude.** The best way to influence behavior at your marina is to adopt and promote a clean marina attitude. If management takes being a clean marina seriously and communicates it to tenants, visitors and staff, then marina users will take it seriously.
- ◆ **Develop an education plan.** A formal written document is not essential to developing an education strategy. It is more important to:
 1. determine who the audience is (tenants, contractors, visiting boaters, the public);
 2. decide what messages need to be communicated; and
 3. determine the delivery method most likely to reach the selected audience.
- ◆ **Opt for a multi-media approach.** Changing behavior through education often requires getting the message out in more ways than one. Most successful boater education efforts are based on a multi-media approach. The following recommended education strategies offer ideas that can be included in a multi-media strategy for boater outreach.

- ◆ **Post clean boating information in the marina office.** The office is often the first point of contact between tenants, visiting boaters, and boat maintenance workers and the marina. It's important that the clean marina attitude be exhibited here. Use the following methods to display a clean marina attitude in the front office:
 1. **Bulletin Board.** Maintain a clean boating bulletin board that displays waste disposal locations and information, the marina's environmental policies, copies of lease provisions that relate to clean boating, and other attractive materials that remind boaters about clean boating habits. See the information and resources section below for possible information sources.
 2. **Display.** Create an eye-catching display of clean boating information that boaters can take with them. Remember that brochures and pamphlets are more noticeable when displayed upright in a brochure holder.
- ◆ **Promote clean boating habits by word-of-mouth and face-to-face boater education.** Field experience and research suggest that boaters are more likely to change their behavior based on information obtained from friends and other boaters. Invite Dockwalkers to your facility to educate marina tenants and visitors about environmentally sound boating. Check the Resources and Information section to find out about Dockwalkers.
 1. Invite Coast Guard Auxiliarists to partner Dockwalkers with vessel examination. Arrange special opportunities for boaters to avail themselves of the free CG Auxiliary vessel examinations and ask that they send Dockwalkers too.
 2. Host a Dockwalker training for staff and boaters interested in educating boaters about environmentally sound boating practices. Your staff and tenants can be trained to walk the docks and talk to your tenants, or other volunteer Dockwalkers can conduct outreach at your facility.
- ◆ **If you have a marine supply shop, make it a source of clean boating information.**
 1. Stock your chandlery or supply store with fact sheets, newsletters, and clean boating displays.
 2. Use National Clean Boating Fact Sheets as shopping bag stuffers or for a display.
- ◆ **Tailor your communication to your boating community.** Remember to include bi-lingual materials if your boating community includes non-English speakers.
- ◆ **Educate new tenants and visiting boaters about the marina's clean marina policies.** Think about how to communicate with tenants when a facility has a high turnover rate. Some suggested methods for communicating with new tenants:
 1. a "welcome" packet that includes marina environmental policies and clean boating educational materials that inform boaters about on-site and near-by environmental services that support clean boating practices;
 2. include clean boating policies in lease provisions; and
 3. send staff to meet and greet new tenants and provide clean boating educational materials
- ◆ **Train your employees to pass information on to boaters.**

1. Have marina staff attend a Dockwalker training.
2. Include clean boating practices in a marina-hosted clean boating training.
3. Use the California Clean boating video, “Out Playground, Their World” from the Santa Monica Bay Restoration Commission as a teaching tool for information about obtaining copies of this video.
4. Make the National Clean Boating Campaign fact sheets and other boater education materials available for staff to distribute to boaters

◆ **Develop clean boating inserts for your monthly billing.**

1. For readily available artwork, contact the Boating Clean and Green Campaign for artwork in digital format that can be customized for your marina.
2. Use the National Clean Boating Fact Sheets to develop your own messages and billing inserts.

◆ **Inform boaters about where to find environmental services, such as, sewage pump-outs, oil change facilities and used oil collection, bilge pump-outs, and absorbent pad distribution and spend pad collection.**

1. Advertise www.earths911.org or www.coastal.ca.gov/ccbn.ccbndx.html for finding environmental services for California boaters.
2. Distribute tide tables that contain clean boating information and charts showing the Environmental Services at California Marinas. For a sample Boating Clean and Green Tide Table, contact the Boating Clean and Green Campaign, or the Tidebook Company.
3. Distribute maps and boater guides that show where environmental services are located. Examples can be obtained from the San Francisco Estuary Project.

◆ **Use Signs to get the Word Out.** Signs for marina tenants can be posted on docks, at the marina office and near waste disposal receptacles. Signs at boat launch ramps and fuel docks can be effective means to educate non-tenant boaters that use the marina. Fuel dock signs and boat launch ramp signs have been developed by the Boating Clean and Green Campaign. Contact the California Coastal Commission for signs.

1. Signs should be easy to read, using large print and an eye-catching design.
2. Choose durable materials, such as aluminum, and select weatherproofing and anti-graffiti coatings.

Be careful how you word your signs. Signs for the sewage pump-out or dump station should include the sewage pump-out logo (www.dbw.ca.gov) and should clearly instruct boaters that the sewage pump is not for bilge evacuation. Clearly label services and include clearly written operation instructions.

◆ **Include clean marina services on maps of your marina.** Distribute free maps of the marina (published by Southeast Publications) to tenants and visitors that show the location of fuel docks, sewage pump-outs, port-a-potty dump stations, used oil collection services, bilge pump-outs, oil absorbent pad distribution and collection services, oil change services, solid waste recycling services, and other environmental services for boaters.

- ◆ **Include clean boating information in periodic newsletters distributed to tenants.**

IV. INFORMATION AND RESOURCES

General Clean Boating and Clean Marinas

- California Coastal Commission
www.coastal.ca.gov/ccbn/ccbndx.html
(800)COAST4U
- U.S. EPA marinas website:
www.epa.gov/owow/nps/marinas.html
- National Clean Boating Campaign
www.cleanboating.org
(877) 892-0011
- University of California Sea Grant, San Diego
<http://seagrant.ucdavis.edu/marharboats.htm>
- The Earth's 911 / Clean Boating web-page
www.cleanup.org
- Santa Monica Bay Restoration Commission:
<http://www.santamonica.org/site/programs/layout/boater.jsp>

Clean Marina Certification and Recognition Programs

- The Ocean Conservancy Good Mate Program
www.oceanconservancy.org
(202) 429-5609
- Maryland Clean Marina Initiative
www.dnr.state.md.us/boating/cleanmarina
(410) 260-8770
- Virginia Clean Marina Program
www.deq.state.va.us/vacleanmarina
(804) 684-7768
- Florida's Clean Marina Program
www.dep.state.fl.us/law/Grants/CMP/default.htm
(850) 488-5757

Siting and Design, Conservation Measures

- U. S. Environmental Protection Agency, *EPA Management Measures*, “Excerpts from Federal Guidance,” January 1993. EPA-840-B-92-002. Washington, DC.
- U.S. Environmental Protection Agency, *National Management Measures Guidance to Control Nonpoint Source Pollution from Marinas and Recreational Boating*, November 2001, EPA 841-B-01-005
- US EPA marinas website:
<http://www.epa.gov/owow/nps/marinas.html>
- US EPA marinas website:
<http://www.epa.gov/owow/nps/marinas.html>
- California Coastal Commission
www.coastal.ca.gov
Provides a copy of the California’s “Plan for Non-point Source Pollution Control” including a list of management measures for marinas and boating that address siting and design considerations.
- National Clean Boating Campaign website
www.cleanboating.org
- University of California Sea Grant, San Diego:
<http://seagrants.ucdavis.edu/marharboats.htm>

Employee Training

- Developing a Workplace Injury and Illness Prevention Program:
www.dir.ca.gov/dosh/dosh_publications/iipp.html
- General information about employee safety and training, call the Cal/OSHA Consultation Service at 1(800) 963-9424
- Check the phone book and Internet for employee training in hazardous materials management.
- U.S. DOT hazardous materials training classes:
<http://hazmat.dot.gov/training.htm>

Boat Cleaning and Maintenance

See General Information (above)

Underwater Hull Cleaning

- University of California Sea Grant, San Diego:
<http://seagrants.ucdavis.edu/hullclean.htm>

(858) 694-2854

Johnson, L.T. and Miller, *What you Need to Know about Nontoxic Antifouling Strategies for Boats*, University of California, Sea Grant Extension Program, October 2002.

Boat Sewage Management

General Information

- California Department of Boating and Waterways
<http://www.dbw.ca.gov>
(916) 263-1331, Toll-free (888) 326-2822
<http://www.dbw.ca.gov/Pubs/Sanitation/index.htm>
- San Francisco Estuary Project
San Francisco Bay Regional Water Quality Control Board
(510) 622-2465
<http://www.abag.ca.gov/bayarea/sfep/programs/boated/index.html>
- Santa Monica Bay Restoration Commission
<http://www.santamonica bay.org/site/programs/layout/boater.jsp>
(213) 576-6645

No-Discharge Area Designation

- U.S.EPA Oceans and Coastal Protection Division (OCPD)
(202) 260-1952
<http://www.epa.gov/owow/oceans/>
- **Location of Sewage Pump-Out Facilities in California**
www.coastal.ca.gov/ccbn/ccbndx.html
www.cleanup.org

Oil and Fuel

- *Location of used oil collection and hazardous waste disposal facilities*
1(800)CLEANUP
www.cleanup.org
www.coastal.ca.gov/ccbn/ccbndx.html
- *List of hazardous waste haulers / transporters – available at DTSC Registry*
<http://www.dtsc.ca.gov/HazardousWaste/Trans000.cfm>

- *“Stop the Drops” Fuel Spill Prevention Program*
Clean Water Trust / Boat U.S.
(800) 395-2628
- *Small Craft Refueling Facilities Certification Program*
California Department of Fish and Game
OSPR Outreach Program
<http://www.dfg.ca.gov/ospr/organizational/admin/outreach.htm>
(916) 323-6286

Hazardous Waste Management

- *List of hazardous waste haulers / transporters – available at DTSC Registry*
<http://www.dtsc.ca.gov/HazardousWaste/Trans000.cfm>
- *Questions regarding hazardous waste management*
DTSC regional Public and Business Liaisons
(800)72TOXIC (1-800-728-6942)
www.dtsc.ca.gov
- *Location of local hazardous waste disposal facilities*
(800)CLEANUP
www.cleanup.org

Solid Waste

- *General Solid Waste Information*
<http://www.epa.gov/epaoswer/non-hw/muncpl/facts.htm>
www.ciwmb.ca.gov
- *Proper disposal of hazardous wastes*
Call your local CUPA (Appendix #6) for locations
Call 1(800)CLEANUP for locations
- *Marine Debris Issues*
The Ocean Conservancy
(202) 429-5609
www.oceanconservancy.org
- The Algalita Marine Research Foundation
(562) 433-2361
www.algalita.org
- The California Coastal Commission
(800) COAST4U
www.coastal.ca.gov

- Locating Recyclers or Companies
www.calMax.org to find a recycler that may take plastic shrink wrap.
- *Stash Your Trash* –free brochures
Boat U.S. Foundation
1(800)BOAT-USA
www.boatus.com
- *To obtain fishing line recycling boxes, call:*
Pure Fishing
877-777-3850 ext. 8419.
- *Send fishing line directly to:*
Berkley Recycling Center
1900 18th Street
Spirit Lake, IA 51360-1099.

Fish Waste, Greywater Minimization, and Boat Operation

See general clean boating and clean marinas resources, above

Aquatic Nuisance Species

- Report sightings of invasive species toll-free to:
(877)STOP ANS, or (877)786-7267.
- Invasive Species Information System
<http://www.invasivespecies.gov>
- California Sea Grant Extension Program
(650) 871-7559
<http://ballast-outreach-ucsgep.ucdavis.edu>
- Western Regional Panel
(303) 236-7862
<http://www.wrp-ans.org>

Stormwater Runoff

- *Storm Water Phase II Final Rule Fact Sheet Series*
US EPA Office of Wastewater Management
www.epa.gov/owm/sw/phase2
- National Coalition on Integrated Pest Management
<http://www.attra.org/attra-pub/ipm.html>

- Rhode Island Sea Grant
<http://seagrants.gso.uri.edu/BMP/BMP.html>
- *Stormwater Runoff Best Management Practices for Marinas*
Sea Grant Northeast
www.seagrants.sunysb.edu/pages/BMPsForMarina.htm

Boater Education

- California Coastal Commission
Boating Clean and Green Campaign
California Clean Boating Network
(800)COAST4U, or (415)904-5200
www.coastal.ca.gov/ccbn/ccbndx.html
- Earth's 911 website –
*Clean boating information for California-
includes location of environmental services at California marinas*
www.cleanup.org, or www.earth911.org
- National Clean Boating Campaign website
www.cleanboating.org
- University of California Sea Grant, San Diego
Clean boating education program
(619) 694-2845
<http://seagrants.ucdavis.edu/marharboats.htm>
- Santa Monica Bay Restoration Commission
Clean boating education program
California Clean Boating Network
(213) 576-6645
<http://www.santamonica.org/site/programs/layout/boater.jsp>
- **State-Wide DOCKWALKERS**
California Coastal Commission
(800)COAST4U
<http://www.coastal.ca.gov/ccbn/ccbndx.html>
- **Central Coast DOCKWALKERS**
Save Our Shores, 831-462-5660
www.saveourshores.org
- **The Tidebook Company** –
*clean boating version of tide books
includes maps of environmental services at marinas*
(415) 777-9275

- **The San Francisco Estuary Project** – *clean vessel (sewage) education program*
<http://www.abag.ca.gov/bayarea/sfep/programs/boated/index.html>
(510) 622-2406
- **The Southeast Publications**
Free maps published for your marina if adequate advertising purchased from local businesses.
(954) 583-3900

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California Clean Marina Checklist

How to Use this Checklist

The California Coastal Commission's Boating Clean and Green Campaign developed this Checklist. It is designed to help you, the marina operator, in conducting assessments of your operations and management in order to help you protect the water quality at and near your marina. By answering the questions contained in this Checklist, you will be able to identify opportunities to improve your facility and minimize environmental problems.

Answer the questions by checking a "yes" or "no" or "N/A" (not applicable). After answering the questions in the Checklist, review those with a "No" response and evaluate the feasibility of implementing those measures. The cost of a pollution minimization measure should be evaluated not only in terms of the short term investment in a piece of equipment or provision of a service, but also in terms of the potential long-term savings. Remember, pollution costs money. Whether it's dredging and disposal of contaminated wastes, paying the high costs of oil spill response, or huge garbage tipping fees, it's often true that the costs of dealing with environmental problems are higher than the pollution prevention efforts. Additional incentives for implementing clean marina practices include reducing potential liability for oil and hazardous waste incidents, and maintaining the value of your property. The value of operating a clean marina that attracts business and protects the natural resources that entice people to go boating should not be underestimated.

The practices recommended in this Checklist reflect the suggested practices of the *California Clean Marinas Guidebook*. Consult the *Guidebook* for further clarification of any suggested practices. To obtain a copy, contact the California Coastal Commission at 1(800)COAST4U, or download it from the website at: www.coastal.ca.gov/ccbn/ccbndx.html

Clean Marina Management	YES	NO	N/A
1. Clean Marina Planning – DO YOU/HAVE YOU....			
• have a clean marina plan?	___	___	___
• know who will implement the plan?	___	___	___
• checked with your local CUPA ³ to make sure you are in compliance with all environmental regulations that apply?	___	___	___
• determined who has responsibility for implementing the plan?	___	___	___
• communicated the contents of the Plan to staff?	___	___	___
2. Marina Environmental Policies – DO YOU/ HAVE YOU...			
• developed marina environmental policies that address how boaters and contractors conduct boat cleaning and maintenance and manage sewage, hazardous wastes, solid waste, and how you will repeat handle polluters?	___	___	___
• have marina environmental policies that are part of the contracts with your tenants and boat maintenance contractors?	___	___	___
• post your marina environmental policies in conspicuous places so that your customers see them regularly?	___	___	___
• developed methods for identifying violators of marina environmental policies?	___	___	___
3. Staff Training and Emergency Response – DO YOU / HAVE YOU			
• Trained staff in how to respond to oil spills?	___	___	___
• conduct regular emergency response drills for preparedness?	___	___	___
• Have training that covers how to respond to polluting workers and customers and who has the authority to approach boaters them?	___	___	___

* A CUPA is a Certified Unified Program Agency, generally a local (city or county) environmental agency or fire department.

Vessel Cleaning and Maintenance Operations	YES	NO	N/A
DO YOU/HAVE YOU			
• adopted a policy regarding the amount and type of work that can be performed over the water which discourages large boat maintenance projects?	_____	_____	_____
• established a lending program for pollution prevention equipment, such as vacuum sanders with collection bags, and/or portable oil change equipment?	_____	_____	_____
• use a no-discharge approach to maintaining marina structures?	_____	_____	_____
• encourage the use of less-toxic cleaning and repair products through education and by providing them at the supply store (if one is on site)?	_____	_____	_____
• have established methods to minimize the accumulation of leftover products, such as notice boards, give-away shelves, or education?	_____	_____	_____
• educate boaters and contractors to minimize the amount of debris and discharges of pollutants associated with boat maintenance?	_____	_____	_____
• encourage underwater hull cleaners to use “best management practices” to prevent the release of copper-laden paints in marina waters?	_____	_____	_____
 Sewage Management	 YES	 NO	 N/A
DO YOU/HAVE YOU			
• installed a sewage pump-out system to service tenants’ boats that have holding tanks?	_____	_____	_____
• regularly inspect and maintain the pump-out and keep working well?	_____	_____	_____
• provide convenient and comfortable restroom facilities?	_____	_____	_____
• if you have live-aboard tenants, do you provide locked restroom facilities for tenants only in order to make them feel safe and comfortable using them?	_____	_____	_____
• for guests and transient boaters, do you have public restrooms?	_____	_____	_____
• do you make efforts to ensure that live-aboards are not discharging untreated sewage wastes?	_____	_____	_____
• educate boaters about sound sewage management practices?	_____	_____	_____
 Oil and Fuel Contamination	 YES	 NO	 N/A
DO YOU/HAVE YOU			
• informed marina tenants of practices that minimize oily discharges?	_____	_____	_____
• developed marina policies that will help minimize oily discharges?	_____	_____	_____
• provided a system for preventing overboard discharge of oily bilge water, such as a bilge pump-out or oil absorbent pad distribution and collection program?	_____	_____	_____
• do you offer spill proof oil changes (an oil change service, contracted services, or lending portable equipment)?	_____	_____	_____
• advise boaters about soap-less bilge cleaning techniques?	_____	_____	_____
• provide used oil collection and recycling?	_____	_____	_____
• provide collection and recycling for used oil filters or inform boaters about the locations of the nearest oil recycling centers?	_____	_____	_____
• provide clearly labeled, separate tanks or containers for disposal of used oil and oil filters?	_____	_____	_____
• encourage boaters to install and use fuel spill prevention devices?	_____	_____	_____
 <i>If you operate a fueling facility....</i>			
• supervise fueling to prevent spills?	_____	_____	_____

- | | | | |
|---|-------|-------|-------|
| • provide oil-only absorbents for fueling to catch drips and spills, AND provide collection of saturated absorbent pads? | _____ | _____ | _____ |
| • stock absorbents and fuel spill prevention devices in your chandlery? | _____ | _____ | _____ |
| • educate fuel dock attendants and users in spill-proof fueling methods? | _____ | _____ | _____ |
| • maintain an adequate supply of oil spill response materials on-site to address a spill from the largest boat in the marina? | _____ | _____ | _____ |
| • developed an oil spill response plan? | _____ | _____ | _____ |
| • trained marina staff in proper oil and chemical spill reporting protocol? | _____ | _____ | _____ |
| • posted federal and state oil and chemical spill reporting phone numbers prominently around the marina? | _____ | _____ | _____ |

HAZARDOUS WASTE MANAGEMENT

YES NO N/A

DO YOU/ HAVE YOU

- | | | | |
|---|-------|-------|-------|
| • provide or arranged for hazardous waste collection for your tenants? | _____ | _____ | _____ |
| • segregate wastes for recycling and disposal (antifreeze, oil, batteries, filters) and store the properly (i.e according to labeling and shipping requirements and limits on time for accumulation)? | _____ | _____ | _____ |
| • educate boaters to avoid using products likely to generate hazardous waste? | _____ | _____ | _____ |

TRASH AND MARINE DEBRIS

YES NO N/A

DO YOU/HAVE YOU

- | | | | |
|---|-------|-------|-------|
| • encourage boaters to stow goods securely on-board to prevent accidental overboard discharge? | _____ | _____ | _____ |
| • provide adequate and convenient garbage collection facilities? | _____ | _____ | _____ |
| • provide convenient recycling facilities for collection of paper, plastic, glass, aluminum, etc (whatever is collected in your community)? | _____ | _____ | _____ |
| • provide recycling for fishing line and nets – if you have a significant fishing population. | _____ | _____ | _____ |
| • provide trash and recycling at the boat launch ramp? | _____ | _____ | _____ |
| • provide recycling for boat shrink wrap, if this is common in your facility? | _____ | _____ | _____ |
| • encourage the use of non-disposable products, rather than plastic and polystyrene cups and food containers, and other disposable goods? | _____ | _____ | _____ |
| • encourage waste reduction and recycling in the marina office? | _____ | _____ | _____ |

GREY WATER MINIMIZATION

DO YOU/HAVE YOU

- | | | | |
|---|-------|-------|-------|
| • informed boaters that grey-water cannot be legally discharged in EPA-designated No-Discharge Areas? | _____ | _____ | _____ |
| • make shower, dishwashing and laundry facilities available to your tenants? | _____ | _____ | _____ |
| • if sinks and showers and laundry facilities are not available in the marina, do you encourage boaters to save those tasks for home? | _____ | _____ | _____ |
| • educate boaters about reducing the grey-water discharges generated by top-side cleaning and maintenance? | _____ | _____ | _____ |

FISH WASTE MANAGEMENT

DO YOU/HAVE YOU

- | | | | |
|--|-------|-------|-------|
| • installed a fish cleaning station? | _____ | _____ | _____ |
| • If you have a fish cleaning station, have you made sure that your boaters know about it and where it is located? | _____ | _____ | _____ |
| • provide proper disposal for fish wastes (for marinas where waters are not well-flushed by tidal action or with a large fishing community)? Methods | _____ | _____ | _____ |

include discharge to sanitary sewer after grinding, composting, or small volumes in the trash in plastic bags.	_____	_____	_____
BOAT OPERATION	YES	NO	N/A
DO YOU / HAVE YOU			
• protect sea-grass beds and bottom habitats in shallow waters?	_____	_____	_____
• used any methods to prevent shoreline erosion, to decrease turbidity, such as speed limits and no wake zones?	_____	_____	_____
• determined whether and what invasive species are a concern in your area?	_____	_____	_____
• prohibit the dumping or dipping of bait buckets in areas where Invasive species may be a threat?	_____	_____	_____
• inform boaters about methods to use in preventing the spread of aquatic nuisance species?	_____	_____	_____
STORM-WATER RUNOFF	YES	NO	N/A
DO YOU/HAVE YOU			
• placed filters or absorbents in drain inlets to remove oil and grease? If so, do you dispose of used materials as hazardous waste?	_____	_____	_____
• install oil-grit separators in areas where petroleum is likely to be spilled (i.e. near work and maintenance areas)?	_____	_____	_____
• incorporated vegetated areas and filter strips to areas of contaminated runoff?	_____	_____	_____
• conduct regular sweeping or vacuum sweeping of parking lots?	_____	_____	_____
• adopted non-toxic landscaping methods, such as IPM or organic?	_____	_____	_____
• practice water-wise landscaping?	_____	_____	_____
• Encourage tenants to clean up pet waste and provide methods to make it easier?	_____	_____	_____
IN DESIGNATED SHORE-SIDE BOAT MAINTENANCE AREAS:			
• use waste collection, treatment and disposal systems to handle wastewater from pressure-washing	_____	_____	_____
• perform boat cleaning, maintenance and repair that emits air particulates in enclosed areas (indoors, in spray booths, or tarp enclosures)?	_____	_____	_____
• Clean hull maintenance areas immediately after any maintenance to remove debris and dispose of collected debris properly?	_____	_____	_____
• Use vacuum sanders in sanding operations and to collect using a bag?	_____	_____	_____
• have an established sweeping schedule that results in frequent sweeping around hull maintenance areas, roads, parking lots and driveways?	_____	_____	_____
• store chemicals and wastes in covered enclosed areas and provide secondary containment around the storage area.	_____	_____	_____
BOATER EDUCATION	YES	NO	N/A
DO YOU/HAVE YOU			
• developed plans for educating marina users about clean boating practices?	_____	_____	_____
• does the plan employ a multi-media approach (i.e reach boaters through various educational means)?	_____	_____	_____
• post clean boating information in the marina office?	_____	_____	_____
• promote clean boating by word-of-mouth and face-to-face boater education?	_____	_____	_____
• made your marine supply shop a source of clean boating information?	_____	_____	_____

- educate new tenants and visiting boaters about the marina's clean marina policies? _____
- train your employees to pass information on to boaters? _____
- develop clean boating inserts for your monthly billing? _____
- inform boaters about where to find environmental services for their boats, such as sewage pump-outs, oil change facilities, used oil recycling, bilge pump-outs, engine steam cleaning, absorbent pad distribution and collection, and hazardous waste disposal? _____
- use signs to get the word out – post environmental information _____
- include clean marina services on maps of your marina _____
- distribute tide table booklets with maps or charts that identify clean marina services available in your region? _____
- include clean boating information in periodic newsletters distributed to marina tenants? _____

APPENDIX # 2

SAMPLE MARINA ENVIRONMENTAL POLICIES FOR BOATERS REGARDING BOAT MAINTENANCE

GENERAL

1. All self-employed boat workers and independent contractors must register with and receive approval from the manager before conducting work on the marina premises.
2. All work conducted on marina premises must conform to the policies specified herein.
3. Boat owners, and contractors that they hire, are required to make all major repairs in boat yards.
4. Boat owners and their contractors may undertake boat projects as needed to maintain their vessel's safety, appearance, and performance. However, boat cleaning and maintenance activities performed in boat slips shall be limited to those activities that do not create toxic air emissions or water discharges of products or debris. Large projects, likely to result in significant product discharges or particulate emissions, shall not be conducted in the marina slip.

BOAT CLEANING

1. Use less-toxic phosphate-free and biodegradable boat cleaning products.
2. Reduce the amount of product needed to clean the top-side by cleaning more frequently with fresh-water, or by covering the boat.

SURFACE PREPARATION

1. Do not perform this work in the water unless precautions are taken to prevent any discharge of paint or sanding debris to the water. Work indoors or in enclosed areas. If performing work outdoors, refrain from sanding or painting on windy days when debris or paint can be carried to the water or other areas of the marina where it will contaminate stormwater.
2. Use vacuum sanders with attached collection bags
3. For painting use low-density, high volume sprayers.
4. Use tarps or visquine sheets to catch and control falling debris, and vacuum or sweep frequently to prevent discharge of debris into the water.
5. Use water-based solvents and teak cleaners. For other boat cleaning products, use biodegradable, phosphate-free cleaners.

PAINTING AND VARNISHING

1. Painting, varnishing, and other finishing work shall be limited to touch-ups and repairs. Large refinishing projects shall not be conducted over the water and should be saved for boat haul-outs to permitted repair facilities with waste collection and treatment systems.
2. Limit the amount of open solvents, paints, or varnish to one gallon or less at any one time.
3. Open containers are not allowed on the docks. If a material is in use, the open container may be permitted topside on the boat, as long as it is in secondary containment and all scuppers are plugged.
4. Always mix paints, varnish, epoxy, and other products over a tarp in a drip pan.
5. Spray painting is not permitted in the marina.

6. Do not dispose of leftover paints, solvents, or varnishes in the marina dumpsters or anywhere on marina premises. Dispose of these leftover products at a hazardous waste disposal facility. To find the location of such facilities, ask the marina management or call 1(800)CLEANUP.
7. Use less-toxic paints and varnishes, including water-based products. Choose paints with low volatile organic compound (VOC) content.

HULL MAINTENANCE*

1. The use of tributyltin (TBT) -based paints is prohibited. No cleaning of bottom paints containing TBT is permitted within the marina.
2. Copper-based paints shall be prevented from entering marina waters and sediments.
3. Perform hull cleaning in accordance with the correct procedure for type of hull coating, but in a manner that prevents the removal of the paint and discharge of heavy metals and other pollutants to the water.
4. Traditional soft-sloughing paints are designed to release more paint when new. No cleaning shall be performed on such paints within 90 days of paint application.
5. Clean boat bottoms with non-abrasive methods, before marine grass or hard fouling growths become established on painted surfaces. Use soft carpet, or for rotary cleaning, a long bristled soft brush passed quickly and lightly over the surface.
6. When marine growth is significant and can't be removed without abrasive cleaning methods, assess whether such cleaning can be performed without paint removal occurring. If cleaning may lead to paint removal, refrain from cleaning in the slip. Activities that may result in discharges of paint containing copper and/or heavy metals should be conducted in a boat yard with waste collection and treatment systems that is permitted by a Regional Water Quality Control Board.
7. Collect spent zinc anodes for recycling. Contact local scrap metal recyclers for disposal, or dispose of at local hazardous waste collection facility. Call 1(800)CLEANUP for the locations.

HAZARDOUS WASTES

1. Spent antifreeze, shall be segregated and recycled. For nearest recycling locations, contact marina management or call 1(800)CLEANUP.
2. Recycle all used lead-acid batteries. Do not dispose of batteries on marina premises. For nearest recycling locations, contact marina management or call 1(800)CLEANUP.

ENGINES, BILGES, AND OIL DISCHARGE

1. Oily bilge water shall not be pumped overboard.
2. No discharges shall be permitted that cause an oily sheen.
3. Soaps or detergents shall not be used to disperse an oil sheen.
4. If oil or fuel inadvertently reaches the water, oil absorbent booms or other absorbent materials must be placed around the spill and appropriate clean-up actions taken. If the oil spill is large, an oil spill response company must be called to clean up the spill.
5. Spills of oil or chemicals into the water shall be reported to the federal reporting number (800)424-8802, and the state reporting number (800)OILS911.

* Hull cleaning recommendations adapted from materials produced by the California Professional Divers Association.

6. Conduct all oil changes, and oil or fuel transfers using spill-saving devices, such as, funnels, drip pans, or oil pumps that transfer used oil to a closed container for transfer to a recycling facility.
7. Used oil and oil filters must be separated from other wastes and recycled. Contact marina management for disposal location, or call 1(800)CLEANUP.
8. Diesel and gasoline must be disposed of as hazardous waste. Contact marina management for hazardous waste disposal locations, or call 1(800)CLEANUP.
9. No oil, fuel, or oil or fuel filters shall be disposed of in the marina dumpster, anywhere on the marina premises, or in nearby waters. These items must be segregated and recycled.
10. Used oil absorbents must be disposed of as hazardous waste. Contact marina management for disposal locations, or call 1(800)CLEANUP.

SOLID WASTE DISPOSAL

1. Dispose of all garbage in proper shore-side receptacles.
2. Never leave trash or fishing gear in the water.
3. Keep cigarette butts out of the water. Don't leave them on the grounds of the marina or they will enter the waterway via stormwater.
4. Recycle all glass, plastic, paper and aluminum to the maximum extent possible, based on your home or marina recycling program.
5. Minimize the amount of trash you bring on board. Buy in bulk, repack goods at home into reusable storage containers, and reduce the amount of disposable paper, plastic and other types of goods you use on board.

CHEMICAL STORAGE

1. Purchase only the amount of chemicals/products you need for a project.
2. Review storage of products every six months and properly dispose of old or unnecessary products. Ask your marina manager for the location of the closest hazardous waste disposal facility or call 1(800)CLEANUP.
3. Do not store flammable or combustible liquids, (i.e. gasoline and other fuels, oil and oil based paints, paint thinner and other thinners, epoxy resin and other resins, etc.) or other hazardous materials, (i.e. acids, oxidizers, poisons, etc.) in dock boxes.
4. All dock boxes are subject to inspection by the marina supervisor at all reasonable times.
5. All materials must be stored indoors or in covered containers.
6. Secure watertight containers must be used when storing materials and wastes outside.

SEWAGE

1. Untreated sewage shall not be discharged overboard. Store sewage in holding tanks or port-a-potties and discharge at pump-outs or dump-stations.
2. Do not discharge type I or II Marine Sanitation Devices (MSDs) while in marina waters. Ensure that these systems are working properly and discharge only while under way, but not in shallow, or poorly-flushed waters, and not in no-discharge zones.
3. Do not use holding tank deodorizers and disinfectants that contain quaternary ammonium compounds, formaldehyde, formalin, phenal derivative, alcohol bases, or chlorine bleach. If you must use a holding tank additive, use enzyme-based products.
4. Use shore-side facilities whenever possible.

FISH WASTE

STORM WATER POLLUTION

1. Pet wastes must be cleaned up and disposed of in the garbage.
 2. Use pesticides only after all other options have been exhausted.
-

Marina Management - Employee Training: Applicable Laws and Regulations

Activity	Agency	Statutes and Regulations	Permit or Plan	Purpose	Requirements & Enforcement
Injury and Illness	Cal/OSHA	Labor Code, Title 8 CCR §3203	Worker Injury and Illness Prevention Program	To assure the safety and health of employees while on the job.	Applies to all employers in California. Special model program has been developed for employers with intermittent employees. Call the Cal/OSHA Consultation Service for more information, 1(800)963-9424, www.dir.ca.gov .
Employees who may be exposed to hazardous substances	Cal/OSHA	Title 8 CCR §5194	Written hazard communication program. Material Safety Data Sheets (MSDS) provided and training on how to read them.	To provide employees notification of the identity of hazardous substances they may handle, potential health hazards, and proper handling procedures.	Not applicable to hazardous wastes. Applicable to state regulated hazardous substances, per Title 8 CCR section 339. Not applicable if less than 10 employees or to government agencies. Requires labeling of hazardous substances to which workers may be exposed, making MSDSs available, and employee training. Call the Cal/OSHA Consultation Service for more information, 1(800)963-9424, www.dir.ca.gov
Fueling facilities with tanks > 20,000 gals. or capacity > 75,000	CUPAs	Clean Water Act, § 311(j)(1)(C); Title 40, CFR, Part 112	Spill Prevention, Control and Countermeasure (SPCC) Plan	Facilities create plans that help to prevent oil spills and to assure readiness for appropriate response to such spills.	Requires all marine facilities with potential discharge into marine waters of the state to prepare spill prevention and contingency plans and provide employee training. For more information, contact your local CUPA. See Appendix #.
Facilities that have >1,320 gals per single tank or facility aggregate storage capacity.	DFG- OSPR	Oil Spill Prevention and Response Act of 1990 (Cal. Gov. Code § 8670.28 et. seq.); Pub. Res. Code Div. 7.8 ; Title 14 CCR §§ 815.01 et seq	Oil Spill Contingency Plans	Facilities with fuel and oil storage tanks develop and implement plans to prevent the discharge of oil into or upon the navigable waters of the U.S. or adjoining shorelines.	Requires that facilities with storage capacities for oil and fuel > 1,320 gals. prepare a n Oil Spill Contingency Plan.
Store hazardous materials on-site.	CUPAs	Health and Safety Code, § 25503, et. seq.; Title 19 CCR, §2732	Hazardous Material Release Reporting, Inventory, and Response Plans	Fulfills “community right-to-know” what and where hazardous materials are stored, and ensures preparedness for emergency response.	Requires businesses that generate, collect, store, transport hazardous materials to create Business Plans that include training for emergency response. A Basic Hazardous Material and Hazardous Waste (Business Plan) Training (8-hour) will cover what is required. For more information, contact your local CUPA. See Appendix #.
Generate hazardous wastes.	CUPAs	All facilities must comply with 40 CFR 265.31-265.37: generators of <1000 kg/month must comply with 40 CFR section 262.34(d)(5)(iii).	Generator ID #; hazardous waste manifests	To ensure proper management of hazardous wastes.	Develop emergency procedures / contingency plans, and train employees in proper waste handling and emergency response procedures. Generators that generate less than 1000 kg/month of hazardous waste must ensure than all employees

		Generators that generate 1000 kg or more per month of hazardous waste must comply with 22 CCR, div. 4.5, chapter 15, article 4,section 66265.16.			are thoroughly familiar with proper waste handling and emergency procedures, relevant to their responsibilities during normal facility operations and emergencies. For more information, contact your local CUPA. See Appendix # the DTSC Fact Sheet on Hazardous Waste Generator Requirements .
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Boat Cleaning and Maintenance- Applicable Laws and Regulations

Activity	Agency	Statutes and Regulations	Permit or License	Purpose	Requirements & Enforcement
Boat cleaning	U.S. Coast Guard	The Clean Water Act 33 USC 153.305		Prohibits the use of soaps or other dispersing agents	Prohibits the use of soaps or other dispersing agents to dissipate oil on the water or in the bilge without the permission of the Coast Guard. Same fines for oil spills apply: \$27,500 per incident.
Application of Tributyltin (TBT) anti-fouling paints	California Department of Pesticide Regulation	Food and Agriculture Code, sections 12781, 14005 and 14102; Title 3 CCR section 6488.	TBT is a “restricted use” pesticide for which a pesticide applicator’s license is required.	Prohibits the application of TBT except by persons holding pesticide applicator’s license.	TBT-antifouling coatings only permitted for application to aluminum vessel hulls, vessel hulls 82 feet or more in length and outboard motors and lower drive units. Also prohibited for use on docks, piers, nets and other fishing equipment. Prior to purchase, buyer must present a copy of registration of the vessel to be painted to the paint dealer, or a sworn statement.
Boat maintenance resulting in oil discharge	U.S. Coast Guard	The Clean Water Act of 1972 (amended in 1987)		Prohibits the discharge of oil or oily waste into or upon the navigable waters of the U.S., or the waters of the contiguous zone if such discharge causes a film or sheen upon, or discoloration of, the surface of the water, or causes a sludge or emulsion beneath the surface of the water.	The U.S. Coast Guard must be notified anytime a spill produces a sheen on the water. Those who see or cause a spill must call the National Response Center at 1 (800)-424-8802. Fines for spills are \$27,500 per incident.
In-water boat maintenance or cleaning resulting in spills of pollutants	Regional Water Quality Control Boards	Porter-Cologne Water Quality Control Act (Water Code Chapter 1.5, §§ 13000 et seq.)		To protect the beneficial uses of the waters of the state.	RWQCBs have enforcement authority to issue cleanup and abatement and /cease and desist orders for any discharges that impact the beneficial uses of the waters of the state.
Designated boat maintenance areas	Regional Water Quality Control Boards	Porter-Cologne Water Quality Control Act (Water Code Chapter 1.5, §§ 13000 et seq.)	NPDES permit	To protect the beneficial uses of the waters of the state.	Marinas that have boat maintenance and repair facilities on-site may be required to obtain a Phase I National Pollutant Discharge Elimination System (NPDES) permit for Storm Water Discharges Associated with Industrial Activity. Each RWQCB implements this program differently.

In-water boat maintenance or cleaning resulting in spills of pollutants	California Department of Fish and Game	Fish and Game Code, §5650; §§12000-12002		To protect the fish and wildlife of the state.	Fish and Game wardens are authorized to issue citations for spills or discharges of any substance(s) considered deleterious to fish and wildlife. Fish and Game staff report chronic (sub-lethal, long-term) water pollution conditions to RWQCBs and cooperate in obtaining corrections or abatements to the condition.
Discharge of oil	California Department of Boating and Waterways, enforced by California Department of Fish and Game.	Harbors and Navigation Code §§133, 151		To protect the navigable waters of the state from vessel discharges.	It is a misdemeanor for any person to discharge oil by any methods, means or manner, into or upon the navigable waters of the state from any vessel. Any person that intentionally or negligently causes or permits any oil to be deposited in State waters is liable for civil penalties and cleanup costs. Person(s) that permit the illegal discharge of oil into the waters of the state shall be liable for up to \$6,000 for each discharge, and cleanup and abatement costs of any responding government agency.
Oil spills	California Department of Fish and Game	Oil Spill Prevention and Response Act (Gov. Code §§8670.28 et seq.); Public Resources Code Division 7.8, Title 14 CCR §§ 815.01 et seq.		To protect the fish and wildlife of the state.	DFG enforces laws designed to prevent spills, responds to spills, and investigates them. OSPR/DFG wardens conduct spill investigations, gather and prepare evidence, and enforce the criminal statutes contained in OSPRA.

Sewage Facility Management and Maintenance – Applicable Laws and Regulations

Activity	Agency	Statutes and Regulations	Permit or License	Purpose	Requirements & Enforcement
Grants for sewage pump-out facility installation.	Department of Boating and Waterways	Federal Clean Vessel Act of 1992	N/A	Distribute grant monies to publicly and privately funded marinas in California for construction and renovation of pump-out and dump station facilities.	Funds can constitute up to 75% of all approved projects with the remaining funds provided by the states or marinas. A maximum fee of \$5 can be charged for use of pump-out facilities constructed with grant funds and pump-outs must be available for public use.
Requirements pertaining to installed sewage systems on vessels.		The Clean Water Act of 1972 (amended in 1987).	N/A		All boats with installed toilets must have an operable Coast Guard-approved MSD. It is illegal to discharge untreated sewage from boats within the three mile territorial limit. The law further provides for "no discharge" by boats operated in enclosed lakes and reservoirs or in rivers not capable of interstate navigation. States may apply to the EPA to have certain other waters declared "no discharge zones" if discharge of sewage (treated or untreated) would be harmful.
Illegal discharges of sewage wastes.		Health and Safety Code § 117520.	N/A		No person shall place, deposit, or dump any human excreta in or upon the navigable waters of the State, that are within any marina, yacht harbor, fresh water lake, or fresh water impoundment, from any vessel tied to any dock, slip, or wharf that has toilet facilities available for the use of persons on the vessel.
Maintenance of sewage pump-out facilities and adequate numbers	Department of Boating and Waterways,	Harbors and Navigation Code (Chapter 6, Division 3), §§ 775-778.	N/A	DBW plans, designs, finances, and constructs State boating facilities and coordinates with local governments to develop local boating facilities. The Code provides statutory authority for the SWRCB and RWQCBs to develop and adopt regional standards for	§ 775(a) provides that vessel pump-out facilities, floating restrooms, and on-shore toilets shall be operated in a manner that will prevent the discharge of any sewage to the waters of the state and must be maintained in good working order and regularly cleaned. 775(a)(3) provides that the provision of adequate vessel pump-out facilities is essential to the protection of water quality in the State. § 776(a) provides that every vessel terminal shall, as required by the RWQCB, be equipped with vessel pump-out facilities. All new facilities shall be equipped with a meter. § 777(a) Vessel pumpout facilities and floating

				adequate numbers of sewage facilities and to require the installation of sewage facilities at marinas.	restrooms shall be operated in a manner that prevents discharge of sewage to the waters of the state (b) provides that every vessel pump-out facility shall have a notice posted identifying the city, county, local public health officer , or boating law enforcement officer responsible for enforcement of section 776 and shall provide the phone number where a violation of subdivision (a) may be reported.. § 778 provides that the SWRCB shall adopt standards for the location, construction, operation, and maintenance of vessel pump-out facilities.
Design, construction, operation and maintenance of sewage pump-out facilities	California Department of Boating and Waterways	23 CCR, Chapter 20 and Chapter 20.1, sections 2815-2829; and 2833-2835.		Criteria for the design, construction, operation, and maintenance of pumpout facilities (Sections 2815 through 2829) and administrative procedures to be followed to provide a standard method of determining which marine terminals shall be required to install and operate pumpout facilities (sections 2833 through 2835).	The DBW has established a statewide target of one pumpout/dump station for every 300 boats with holding tanks and has adopted pumpout and dump station guidelines.

Oil and Fuel Contamination: Applicable Laws and Regulations

Activity	Agency	Statutes and Regulations	Permit or License	Purpose	Requirements & Enforcement
Oil or fuel discharge, notification and removal	U.S. Coast Guard	The Clean Water Act 33 USC 1321 as amended by the Oil Pollution Act of 1990 (OPA), Public Law 101-380: 33 U.S.C. 2701 et seq; 33 CFR 153 –	N/A	Prohibits the discharge of oil or oily waste into or upon the navigable waters of the U.S., or the waters of the contiguous zone if such discharge causes a film or sheen upon, or discoloration of, the surface of the water, or causes a sludge or emulsion beneath the surface of the water.	Prohibits discharge of oil greater than 15 ppm or any visible sheen. Those who see or cause a spill (oil or hazardous substances) must call the National Response Center at 1 (800)-424-8802. US Coast Guard can issue fines for causing a spill up to \$27,500 per incident .
Prohibits oil discharge into waters of the state		Harbors and Navigation Code, § 133 – applies to discharges from vessels that use oil for propulsion §151 – applies to all discharges of oil 135(a) - applies to transfer of petroleum.	N/A	To prevent the discharge of oil into the navigable waters of the state	Person(s) that permit the illegal discharge of oil into the waters of the state shall be liable for up to \$6,000 for each discharge, and cleanup and abatement costs of any responding government agency. It is a misdemeanor for any person to discharge oil (including fuel oil, oil sludge, and oil refuse) by any methods, means, or manner, into or upon the navigable waters of the State from any vessel. . It is unlawful to transfer petroleum, chemicals, or other hazardous substances between shore and a vessel unless the flow is continuously monitored as specified in §135(a), exemptions for dispensers with automatic shut-off nozzles that do not have catch-locks and where on-shore tanks meet certain specifications.
Oil discharge (either direct, to sanitary sewer, or stormwater)	SWRCB and RWQCBs	Porter-Cologne Water Quality Control Act (Water Code, chapter 1.5, §§ 13000 et seq)	General NPDES for Industrial Stormwater by SWRCB (mostly for marinas with fueling and/or boat maintenance	Prohibits the disposal of used oil by discharge to sewers, drainage systems, surface or groundwater, watercourses, marine	Any person that intentionally or negligently causes or permits any oil to be deposited in State waters is liable for civil penalties and cleanup costs. RWQCBs can issue cleanup and abatement/cease and desist orders for any discharges that impact the beneficial uses of the waters of the state.

which affects beneficial uses			operations.	waters, by incineration, or by deposit on land. Protects the beneficial uses of the waters of the state.	
Pollution incidents which affect wildlife habitat	CA Dept. of Fish and Game	CA Fish and Game Code, §5650 (a-f) discharge of oil or hazardous substances 5655 clean up and abatement of petroleum – Oil Spill Prevention and Response Act (Gov. Code §§8670.28 et seq.) oil spill response and contingency planning; Public Resources Code Division 7.8, Title 14 CCR §§ 815.01 et seq.-	N/A	Protects fish and wildlife in California.	Fish and game wardens authorized to issue citations for discharges of substance(s) considered deleterious to fish, plants and birds. Fish and Game staff report chronic sub-lethal, long-term) water pollution conditions to RWQCBs and cooperate in obtaining corrections or abatements to the condition.
Adding soaps to disperse and oil sheen	US Coast Guard	The Clean Water Act of 1972 (amended in 1987) 33 USC 1321 as amended by the Oil Pollution Act of 1990 and 33 CFR 153.305	N/A	Prohibits the use of soaps or other dispensing agents to dissipate oil on the water or in the bilge without the permission of the Coast Guard. The U.S. Coast Guard must be notified anytime a spill produces sheen on the water.	Fines for spills or the use of dispersants and emulsifiers are \$27,500 per incident
Hazardous Waste Generation (used oil, oil-saturated absorbent pads, antifreeze, paints, solvents, etc.)	CA Dept. of Toxic Substances Control, (DTSC) unless a Certified Uniform Permitting Agency (CUPA) exists	Health and Safety Code, Division 20, § 25100, et seq.- Health and Safety Code, § 25250-25250.28 California Code of Regulations, Title 22, Division 4.5, Chapter 12	N/A	Regulates hazardous material transport, treatment, storage and disposal: Requirements for the collection, storage, transfer, and recycling of used oil. Establishes standards for the generators of hazardous waste	CUPAs issue permits to any person who stores, treats, or disposes of hazardous waste. Programs also encourage recycling of certain hazardous materials (e.g. used oil, spent batteries, etc.).

				located in California.	
petroleum storage tanks	CUPA or DTSC	Oil Prevention Regulation 40 CFR Part 112- Oil Spill Prevention and Response Act of 1990 (Cal. Gov. Code § 8670.28 et. seq.); Pub. Res. Code Div. 7.8 ; Title 14 CCR §§ 815.01 et seq	Spill Prevention, Containment, and Countermeasure (SPCC) Plan	Develop and implement plan to prevent discharge of oil into or upon navigable waters of the U.S. or adjoining shorelines.	Requires that marinas prepare and implement a plan to prevent any discharge of oil from a facility that has an above-ground storage tank of >600 gal in a single container or an aggregate above-ground storage capacity of > 1,320 gal. or a total underground storage capacity of > 42,000 gal. – requires fueling facilities to train employees for oil spill response. OSPR requires that marine refueling
Marine Refueling Facilities and Small Craft Refueling Docks	DFG-OSPR	The Oil Spill Prevention and Response Act of 1990 (OSPRA) (Cal. Gov. Code §2 8670.28 et seq.) Certificates of Financial Responsibility-Title 14, CCR, Division 1, Subdivision 4, Chapter 3, Subchapter 3, Section 817.03.	Spill contingency plan Certificate of Financial Responsibility	Plan for response to spills from marine refueling facilities	Marine refueling facilities that have a single storage tank exceeding 20,000 gallons or a total useable tank storage capacity exceeding 75,000 gallons must develop oil spill contingency plans and submit Certificates of Financial Responsibility. State law identifies small craft refueling docks as a class of facilities that may apply for exemption from these regulations. In order to be exempt, a small craft refueling dock must become a “certified” small craft refueling dock, contact the Department of Fish and Game Office of Spill Prevention and Response. Check The Resources in section V for more information.

Applicable Laws and Regulations – Hazardous Waste Management

Activity	Agency	Statutes and Regulations	Permit or License	Purpose	Requirements & Enforcement
Generate, store, transfer, or dispose of hazardous waste	DTSC or CUPA	<p>Health and Safety Code, Chap. 6.5, Division 20, § 25100, et seq., Department of Toxic Substances Control, but local regulations implemented by CUPAs supercede</p> <p>California Code of Regulations, Title 22, Division 4.5, Chapter 12 (waste generator requirements) Title 19 (business plans)</p>	<p>Generator ID # required</p> <p>Hazardous Materials Business Plan</p>	<p>Regulates hazardous material transport, treatment, storage and disposal. Programs also encourage recycling of certain hazardous materials (e.g. used oil, spent batteries, etc.). Hazardous materials business plans provide for emergency response preparation.</p> <p>Establishes standards for the generators of hazardous waste located in California</p>	<p>Certified Uniform Program Agencies (CUPAs) issue permits to any person who stores, treats, or disposes of hazardous waste. Where no CUPA exists, DTSC regulations apply.</p> <p>Submittal of hazardous materials business plans must be accompanied by employee training for emergency response. Hazardous waste generators must comply with requirements for manifesting and recordkeeping, container labeling, and waste accumulation periods.</p>
Storage of hazardous materials (not wastes)	DTSC or CUPA	<p>California Fire Code</p> <p>Health and Safety Code, § 25503, et. seq.; Title 19 CCR, §2732</p>	Hazardous Materials Management Plan and Inventory	To ensure that businesses which store hazardous materials (materials that are toxic but not wastes) develop emergency response plans for hazardous materials incidents and provide proper storage of hazardous materials.	<p>CUPAs conduct inspections and issue permits.</p> <p>Requires that businesses which generate, collect, store, transport hazardous materials create Business Plans that include training for emergency response</p>
Discharge of pollutants from non-point sources	RWQCBs	California Water Code, Chapter 1.5, Porter-Cologne Water Quality Control Act (§§1300 et seq.)	Persons proposing to discharge waste must report to appropriate Regional Board (RWQCB) and receive approval.	To protect the beneficial uses of the waters of California by regulating waste discharges.	RWQCBs can issue cease and desist orders and require corrective action. Cleanup and abatement orders may be issued and failure to comply can result in assessment of penalties as well as required reimbursement for government-funded cleanup.

Applicable Laws and Regulations – Trash and Marine Debris

Activity	Agency	Statutes and Regulations	Permit or License	Purpose	Requirements & Enforcement
Solid waste management and recycling.	CA Dept. of Conservation, CA Integrated Waste Management Board, and local government	The Resource Conservation and Recovery Act of 1976		Ensure that solid and hazardous wastes are properly managed “from cradle to grave” and that solid waste management is focused on reducing, reusing and recycling.	
Overboard disposal of garbage	U.S. Coast Guard	The International Convention for the Prevention of Pollution of Ships at Sea (MARPOL): Annex V (Garbage and Plastics) implemented in the U.S. by the Marine Plastic Pollution Research and Control Act of 1987 (MPPRCA) Title II, Public Law 100-220; U.S.C. Title 33, Chapter 33,	A plan and log book are required on vessels 40 feet and over.	To prevent plastics disposal at sea and to ensure adequate garbage collection facilities are available in ports and marine facilities.	Prohibits the discharge of garbage in inland waters or in the ocean within 3 nautical miles of shore. Restricts overboard disposal of garbage, particularly plastic, and requires that marinas accept garbage from marina vessels/customers. A placard which profiles the crew and passengers required on vessels 26 feet and longer.
Solid waste management	State Lands Commission	PRC §§ 6000 et seq.	Lease provisions	Marina leasing program for ungranted state sovereign lands	May require that lessees provide appropriate waste disposal and/or recycling containers as part of commercial lease approval process, and may require lease covenants prohibiting sale of prepared foods in polystyrene containers or packaging within the lease area.
Discharge of solid waste	Department of Fish and Game	FGC §§ 1 et seq., §§5650, §§12000-12002	N/A	Protect fish and wildlife	Citations may be issued by wardens and/or DFG staff may report chronic water pollution conditions to RWQCBs and cooperate in obtaining corrections or abatements to the condition.
Pollutant discharge	SWRCB/RWQCB	PCWQCA (Water Code §§ 1300 et seq.)	NPDES	Protect the beneficial uses of waterways	Cleanup and abatement orders may be issued, and cease and desist orders .

Applicable Laws and Regulations – Grey Water Discharge and Fish Waste Management

Activity	Agency	Statutes and Regulations	Permit or License	Purpose	Requirements & Enforcement
Grey water discharge and fish waste disposal	CA Dept. of Fish and Game	Fish and Game Code, §5650; §§12000-12002	N/A	To protect the fish and wildlife of the state of California.	Fish and Game wardens are authorized to issue citations for spills or discharges of any substance(s) considered deleterious to fish and wildlife. Fish and Game staff report chronic (sublethal, long-term) water pollution conditions to RWQCBs and cooperate in obtaining corrections or abatements to the condition.
Grey water discharge and fish waste disposal	RWQCBs	Porter-Cologne Water Quality Control Act (Water Code §§ 13000 et seq)	Persons proposing to discharge waste must report to appropriate RWQCB and receive approval.	To protect the beneficial uses of the waters of the state of California.	RWQCBs have enforcement authority to issue cleanup and abatement/cease and desist orders for any discharges that impact the beneficial uses of the waters of the state.
Polluting shellfish beds	Department of Health Services	HSC §§ 100275, 115880, 116075, 12150 et seq.	N/A	Public beach and recreational water sanitation; shellfish beds	Microbial standards for beaches and recreational waters; microbiological standards for shellfish beds.

Stormwater Permits and Regulation in California

The water quality standards that pertain to stormwater runoff are determined by the state water quality objectives set forth in the state's Water Quality Control Plan through regional Basin Plans and the California Ocean Plan. Marinas that have boat cleaning, maintenance and repair facilities on-site, and boat repair yards, are generally regulated under the Industrial Stormwater Discharge Program of the Regional Water Quality Control Boards (RWQCBs), the regional water quality implementing agencies under the SWRCB. Under the Clean Water Act, the National Pollution Discharge Elimination System (NPDES) was established to control pollutant discharges, including those caused by stormwater runoff. The state of California and the U.S. EPA have entered into a Memorandum of Understanding whereby the NPDES program in California is administered by the state and regional boards. The NPDES program has been implemented in a phased approach.

NPDES Phase I requires permits for stormwater discharges from: (1) medium and large municipal separate stormwater systems that serve or are located in incorporated places or counties with populations of 100,000 or more people; and (2) eleven categories of industrial activity, one of which is construction activity that disturbs 5 acres or more of land.

The eleven categories of industrial activities for which stormwater discharge permits are required are set forth in 40 CFR 122.26(b)(14). A permit is required for Standard Industrial Classification (SIC) Codes 4493 (marinas) and 3732 (boat yards and boat builders that repair, clean, and/or fuel boats). However, the North American Industry Classification System (NAICS) is replacing the US SIC system and is scheduled to be completed in 2002. The NAICS provides the following numerical categories for related industries: NAICS 81149 (Other Personal and Household Goods Repair and Maintenance); NAICS 336612 (Boat Building); and NAICS 71394 (marinas). Boat building and repair operations are clearly required to obtain a permit under Phase I through the RWQCB in their jurisdiction. Each RWQCB regulates marinas differently. Marinas that have boat cleaning, maintenance or repair operation on-site, or a fueling facility, or both, may be required to obtain a Phase I Stormwater Industrial Discharge Permit and should check with the appropriate RWQCB.

NPDES Phase II was designed specifically to address stormwater and will bring many municipal separate stormwater systems serving fewer than 100,000 people, census districts in counties with fewer than 1,000 per square mile, and small construction sites of between 1 to 5 acres into the NPDES permitting program by March 2003. Construction site where more than 1 acre is disturbed is under permit. Businesses covered under the permit must provide a Notice of Intent (NOI) of their intent to comply and implement BMPs to minimize erosion and pollutant runoff (U.S. EPA *Management Measures* 2001).

APPENDIX # 3



A BOATER'S LESS-TOXIC CLEANING GUIDE

Simple household alternatives to boat cleaning and maintenance products

The products you purchase to clean and maintain your boat can have serious impacts on aquatic life, water quality and human health. Many boat cleaning and maintenance products contain chemicals that are poisonous, corrosive, flammable and/or chemically reactive. When you purchase boat cleaning products, take time to read the label. A signal word, such as "danger/poison," "warning," or "caution" can give you a general indication of the toxicity of a product. If you want more information on a product's contents, ask your retailer or contact the manufacturer for the "Material Safety Data Sheet (MSDS)." The MSDS will list any constituents considered to be hazardous substances by the federal government.

Choosing Cleaning Products:

Whether you clean your boat in the water or on land, boat cleaning products may end up in your local waterway. Most boat cleaning and maintenance products are more caustic than regular household cleaners because boat cleaning is a tougher job. If you decide to purchase a soap to clean your boat, choose phosphate-free non-detergent soaps, such as, vegetable or citrus-based soaps.

How to be a Less Toxic Consumer:

- **Use elbow grease instead!**
- **Use less toxic alternatives whenever possible.**
 - **Buy only the amount that you need.**
 - **Properly handle and store materials.**
- **Dispose of hazardous waste legally and safely.**
- **Call 1(800)CLEANUP for more clean boating information and the locations for used oil recycling and hazardous waste disposal.**

The following alternatives to boat cleaning products have not been tested by the California Coastal Commission. They are offered as suggestions. The sources that were relied upon to develop this list are cited below. While baking soda, vinegar, lemon juice, and vegetable oils are far less harmful than bleaches, scouring powders and detergents, they can still be toxic to aquatic life. Use all cleaning products sparingly and minimize the amount discharged into the water. Never dispose of any cleaning products down the thru-hull drain; dispose of them on shore.

Alternatives to Traditional Cleaning Products:

Product	Household Alternative
General cleaner	<ul style="list-style-type: none"> ❖ Mix baking soda and vinegar. ❖ or, combine lemon juice with borax paste.
Surface cleaner	<ul style="list-style-type: none"> ❖ Mix 1 quart of hot water, 1tsp vegetable oil-based soap/detergent, 1tsp borax and 2 tbsp. vinegar. Vinegar is used as a mild acid to cut grease, borax is used as a water softener, especially good with hard water, to prevent soapy deposits. ❖ Mix 1 cup of vinegar in 1 quart of warm water. ❖ Dissolve baking soda in hot water for a general cleaner.
Degreaser	<ul style="list-style-type: none"> ❖ Make a paste of lemon juice and borax. ❖ When shopping for degreasing products, look for water-based products or citrus-based degreasers. ❖ Avoid products that contain methylene chloride (known to cause cancer in laboratory animals). ❖ Do not use gasoline to clean marine parts. Gas contains benzene (carcinogenic to humans), that, upon evaporation, causes air pollution.
Dish cleaner	<ul style="list-style-type: none"> ❖ Use vegetable oil- based soaps/detergents.
Window cleaner	<ul style="list-style-type: none"> ❖ Dilute one cup of white vinegar with 1qt. water.
Floor cleaner	<ul style="list-style-type: none"> ❖ To clean vinyl tile and linoleum, use 1/4 cup white vinegar, 1/4 cup of washing soda, in 1 gallon of warm water, or one cup vinegar in 2 gallons of water. ❖ Remove scuff marks on linoleum with toothpaste.
Fiberglass cleaner	<ul style="list-style-type: none"> ❖ Use a paste of baking soda and water.
Aluminum cleaner	<ul style="list-style-type: none"> ❖ Mix 1 Tbsp. cream of tartar in 1 quart of hot water.
Brass cleaner	<ul style="list-style-type: none"> ❖ Use Worcestershire sauce, or paste made of equal amounts of salt, vinegar and water.
Copper cleaner	<ul style="list-style-type: none"> ❖ Use lemon juice and water, or paste made of equal amounts of lemon juice, salt and flour.
Chrome cleaner/polish:	<ul style="list-style-type: none"> ❖ Use apple cider vinegar to clean; baby oil to polish.
Hand cleaner	<ul style="list-style-type: none"> ❖ Apply baby oil or margarine, then clean with soap and water.
Head and shower	<ul style="list-style-type: none"> ❖ Clean frequently with a mix of baking soda and water; brush thoroughly. Sprinkle baking soda around the rim of the toilet. ❖ or, to clean and deodorize the head, try a mix of 1/2 cup of borax per 1 gallon of water.
Stainless steel cleaner	<ul style="list-style-type: none"> ❖ Mix baking soda or mineral oil for polishing, vinegar to remove spots.
Scouring Powders	<ul style="list-style-type: none"> ❖ Instead of scouring powder, try using baking soda.
Rug/Upholstery cleaner	<ul style="list-style-type: none"> ❖ Sprinkle on dry corn starch sprinkled on; vacuum.
Teak cleaner	<ul style="list-style-type: none"> ❖ Use a biodegradable soap to remove the dirt and salt water. ❖ Instead of bleaching teak, try using a mild power soap and scrub with bronze wool.
Fiberglass stain remover	<ul style="list-style-type: none"> ❖ Use a Paste of baking soda and water.

Mildew removers	<ul style="list-style-type: none"> ❖ Scrub mildew with borax/water using a nylon scouring pad. ❖ Try scrubbing mildew with a vinegar and salt paste (equal parts), if problem is not severe. ❖ Try vinegar full strength, then rinse. ❖ To inhibit mold and mildew, wash area with 1/2 cup borax /1 gallon hot water .
Wood polish	<ul style="list-style-type: none"> ❖ Use olive, walnut, or almond oil.
Drain opener	<ul style="list-style-type: none"> ❖ Disassemble or use plumber's snake. ❖ Or flush with a mixture of boiling water, one-quarter cup of baking soda and one quarter cup of vinegar.
Paint Products	<ul style="list-style-type: none"> ❖ Avoid paints containing methylene chloride and trichloroethylene (TCE) (evidence that these cause cancer in laboratory animals); benzene (known to cause cancer in humans); 1,1,1-trichloroethane (TCA) (irritant to eyes and tissues), xylene (toxic by drinking and breathing); or toluene (known to cause birth defects).
Wood Preservatives and stains	<ul style="list-style-type: none"> ❖ Do not use old products that contain pentachlorophenol (PCP) (evidence that it causes cancer in laboratory animals), creosote, tributyltin oxide, or folpet. ❖ Water-based preservatives are available that can seal wood and protect it from water rot. ❖ Use water-based stains. ❖ Use finishes derived from natural sources, such as, shellac, tung oil, and linseed oil.

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Funding for the publication of this document was provided by the California Integrated Waste Management Board

APPENDIX # 4

Mission Statement

Our mission is to provide a standard to the professional diving community in which all work performed underwater is unified in the same practices, which address current Non-Point Source (NPS) pollution issues, the Clean Water Act, and future environmental concerns.

We also provide a single focal point of contact for government agencies, organizations and communities with professional diving services in California.





University of California Cooperative Extension

Sea Grant Extension Program

San Diego County

Selecting a Hull Paint for Your Boat

[Home Page](#) | [Boating Pollution Prevention Menu](#)

Introduction

Environmental and Cost Factors

Hull paint toxicants are released over time, especially during underwater hull cleaning.⁷ They may be absorbed by mussels, worms, etc. and passed up the food chain to fish, birds and humans, posing health risks.

Heavy metals accumulate in marina sediments. Contaminated sediments are more expensive to dispose after dredging, because they must be treated as hazardous wastes. This raises costs for marinas and their tenants.

Disposal costs for leftover paints and solvents are high, because they are hazardous wastes. They may also release air pollutants during application.

Making a Choice

Boaters can help underwater hull cleaners, marinas and boatyards control costs, promote a healthy boating environment and encourage abundant marine life by considering environmental factors when selecting an antifouling strategy. More information is available in our publication, ["Boating Pollution Economics & Impacts."](#)

These tips may reduce environmental impacts:

- Go boating often to slow fouling growth.
- Hire an underwater hull cleaner who uses best management practices. (See our publication, ["Selecting Underwater & Topside Maintenance Services for Your Boat."](#))
- Clean hull often to prevent hard growth and reduce scrubbing and toxicant release.
- Select a paint that does not require caustic solvents and releases little or no pollutants.
- Use a hard, less toxic or non-toxic paint and wipe hull often to remove soft growth.

Some boaters use the methods below. There may be drawbacks. Ask marine suppliers, regulatory agencies, other boaters and your marina about cost, availability, effectiveness and regulations.¹⁰

- Store your boat on land
- Store your boat on a floating hoist or surround it in the water with a boat liner or bath. Note: hoists and liners may foul.
- The table (Linked at end) will help you find a paint that meets your requirements. Consult your boatyard, paint dealer and other boaters before deciding.

Factors Affecting Antifouling Paints

Extreme high or low water temperature & salinity, acidic or alkaline waters, fouling growth, waxes, over-spray, dust, silt and chemicals in runoff can clog pores or change paint chemistry and impair antifouling properties.¹³

Regular underwater hull cleaning removes slime build-up & contaminants and increases antifouling ability of hull paint.^{4, 13} Infrequent use allows hard growth to form, requiring forceful hull scrubbing.

Low water allows the hull to hit bottom, scraping the antifouling paint or clogging pores.

Poor surface preparation prevents paint from adhering properly. Proper thickness of epoxy barrier coats beneath antifouling paint prevents blistering.¹³

Immersing the boat too soon or too long after painting, applying too little paint or coats that are too thin reduces paint's life span.^{2, 13}

Faulty or inadequate wiring on boats or in shore power connections may cause stray currents that contribute to corrosion of underwater metals^{7, 13} or (rarely) neutralize antifouling paint.¹¹

Choose your boatyard with care; get supervision if doing the work yourself.⁴

NOTE: The following two tables are meant to be one table; we have broken it into the left and right sides of the table for presentation here.

Hull Paint Selection Factors (Left Side)

Paint Type & Price Range	Antifouling Method	Environmental Considerations	Fuel Consumption ⁵
Soft Sloughing \$75-125/gal ^{11,14}	Free leaching & soft. Paint erodes until completely disintegrated.	Potential to release much toxicant due to uncontrolled	Uneven sloughing increases drag & fuel consumption
Epoxy Ester, Conventional \$155-180/gal ^{11,14}	Hard, smooth finish. Releases toxicant by leaching. Up to 76% copper ^{11,14}	Initial high release of toxicant, replaced by even copper	Rough surface left by toxicant release increases drag & fuel
Vinyl, Conventional \$160-170/gal ^{2,14}	Hard, smooth finish. Releases toxicant by leaching. 40-67% copper ¹²	Better controlled release rate of copper vs. epoxy ester paint	Rough surface left by toxicant release increases drag & fuel
Vinyl, Thin Film Teflon \$136/gal ¹⁵	Hard, smooth finish. Releases copper by leaching. 42% copper ¹⁵	Controlled leach rate of copper. Very hard finish ¹⁵	Slick surface decreases drag & fuel consumption
Copolymer, Ablative \$200-235/gal ^{2,14}	Continuously sheds outer layer to release toxicant ⁹ 46-58% copper ¹⁶	Boat use & underwater cleaning release toxicant ⁵	Surface smooths with boat use; decreases drag & fuel consumption
Water-based, Ablative \$160-192/gal ^{2,14}	Continuously sheds outer layer to release toxicant Up to 64% copper	Boat use & underwater cleaning release toxicant ⁵	Surface smooths with boat use; decreases drag & fuel consumption
Polyurethane, Biocide free \$78-180/gal ^{14,11}	Topside paint. Bard, smooth finish deters fouling. May blister after 72	Primarily a topside paint. No toxicant to prevent fouling	Smooth surface, not blistered decreases drag & fuel consumption
Silicone, Biocide free \$600-630/gal ¹⁴	Deters fouling by creating slick surface when wet ^{2,14}	No toxicant to prevent fouling ¹⁴	Slick surface decreases drag & fuel consumption

Silicone, Biocide free \$600-630/gal ¹⁴	Deters fouling by creating slick surface when wet ^{2,14}	No toxicant to prevent fouling ¹⁴	Slick surface decreases drag & fuel consumption
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* Water-based ablative paints release fewer volatile pollutants (VOCs) than do solvent-based paints.

** Most polyurethane paints are used for cosmetic purposes on hulls; some are more water-resistant. Ask your boatyard.

*** **Durability Notes:** Controlled copper leach rate makes hull paints last longer.

+ **Standard Hull Cleaning Notes:** Clean hull regularly to keep paint clean for releasing toxicant (except sloughing and ablative paints) and to avoid accumulation of hard fouling growth. Ask your underwater hull cleaner to use a soft carpet or diaper for cleaning and rub gently. Regular cleaning also avoids the need for abrasive pads and forceful scrubbing that release more toxicant. For more information, see our publication, ["Underwater Hull Cleaner Best Management Practices"](#)

Hull Paint Selection Factors (Right Side)

Durability ***	Special Hull Cleaning Factors +	Special Hull Preparation ++	Special Paint Application +++	Examples ++++
1 year or less ⁵	Soft paint may release much toxicant with underwater cleaning ⁵	Can apply to rough surfaces ^{5,11}	Launch 8-48 hours after painting ^{5,11}	Petit Yacht Copper, Interlux BottomKote (outside Calif.)
-- 2 years ²	Harder surface release less toxicant with underwater cleaning.		Dry 8 or more hours before launchings. ^{8,13}	Pettit Trinidad, Interlux UltraKote, Unepoxy Plus
-- 2 years ²	Harder surfaces release less toxicant with underwater cleaning		Launch 4 to 16 hrs after painting ^{8,13}	Proline 1088, Interlux Super Vinyl-lux, Pettit Vinylcide
1-1.5 years ¹⁵	Harder surfaces release less toxicant during underwater cleaning	Do not apply over ablative paints ¹⁵	Thin film may need frequent recoat ¹⁵	Extensor VC Offshore
2 years ^{5,9} Does not oxidize in	Moderate potential for toxicant release		Do not overcoat with	Proline Y1044, Interlux Micron CSC, Petit

air ¹²	with underwater cleaning		nonablative paints ^{9, 12}	ACP-50
-- 2 years ^{5,9}	Moderate potential for toxicant release with underwater cleaning	Very clean hull, wet sand or 4000 psi hydrowash ²	Use fresh water for thinning ¹²	Proline 888, Pettit AquaClean. Woolsey Neptune II
Durable topside paint. ³ May blister after 72 hrs in water. ¹⁴	Wipe down often ² , if boat is in water long periods ^{9,14}	Remove old coats ¹⁴		Interlux Interthane Plus! Petit Durathane (2 Part), Proline Deepgloss
2 to 3 years or more ¹⁴	No toxicant release with underwater cleaning.	Remove old coats ¹⁴	Slippery! Special handling for safety. ^{13, 14, 15}	Interlux Veridian 2000, Proline Paints

++ Standard Hull Preparation Notes: Read all directions, thinner, catalyst or solvent requirements for each product. If old paint is in poor condition or consists of more than 4-5 old coats, boatyards can remove old paint and properly dispose of paint chips. ¹² Make sure the hull is free of contamination, such as grease, wax, or sanding residue, so paint adheres properly. De-wax new fiberglass hulls. ^{3,10}

+++ Standard Paint Application Notes: Use solvent-resistant, quality application equipment. ¹¹ Note that paint solvents are **caustic**, except for water-based paints. Apply at least two coats; a third coat gives protection to leading edges of keel, rudder and through-hull fitting. ^{2,12} Consult boatyard for wet mil thickness of paint coats.

++++ Regulations vary; ask your boatyard what paints are permitted locally.

Inquire about new paints that have reduced or no toxicant.

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3. Interlux (1994) Boaters' Painting Guide to Bottom Paints, Topside Enamels, Varnishes, Stains & Fillers and Interprotect.
4. Lewis, Bill (1995) Recreational Boaters of California. Personal communications.
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14. Szafranski, Frank (1995) Sales Representative, Courtaulds Coatings. Personal communications.
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16. West Marine (1995) "West Marine Master Catalog"

ACKNOWLEDGMENTS The authors wish to thank Clay Clifton for his editorial assistance & the following for extensive information & review: Barth Hudiburn, Proline Paint Company; Frank Szafranski, Courtaulds Coatings; David Paige, Pettit Paint; Libby Lucas, Environmental Health Coalition; Terry Koehler, Koehler Kraft; Tom Nielsen, Nielsen-Beaumont Marine Inc.; Bill Roberts, Shelter Island Boatyard; Bill Lewis, Recreational Boaters of California; Greg Cloud, Washington State Dept. of Ecology; & the many advisors and reviewers.

Erika J. A. McCoy, Program Representative
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UNIVERSITY OF CALIFORNIA COOPERATIVE EXTENSION
SEA GRANT EXTENSION PROGRAM
COUNTY OF SAN DIEGO
FARM & HOME ADVISOR DEPARTMENT
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Educational Use, Only

This information is provided on an educational basis to assist you in working with your boatyard or maintenance service. Examples and prices were current in Spring, 1995 and are provided for illustrative purposes; no recommendation is intended or implied. Ask your boatyard, marine supply dealer or regulatory agency about availability, prices and regulations.

This work is sponsored in part by NOAA, National Sea Grant College Program. Department of Commerce, under grant number NA36RG0537, project number A/EA-I, through the California Sea Grant Program, in part by United States Environmental Protection Agency, under grant number NW009982-01-0, in part by the California State Resources Agency, in part by the University of California Division of Agriculture and Natural Resources and in part by the County of San Diego. The views expressed herein are those of the author and do not necessarily reflect those of the sponsors or any of their sub-agencies. The U.S. government may reproduce and distribute for governmental purposes.

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APPENDIX # 5



University of California Cooperative Extension

Sea Grant Extension Program

San Diego County

Underwater Hull Cleaner's Best Management Practices (BMPs)

[Home Page](#) | [Boating Pollution Prevention Menu](#)

Sections:

[Hull Cleaner's BMPs](#)
[Advising Boat Owners](#)

[Maintaining the Hull & Paint](#)
[Protection from Fouling Growth](#)

Underwater hull cleaners can lower operation costs, assist their industry, clients and the marine environment by using best management practices (BMP's) to reduce pollution and extend the life of hull paints.

Objectives for BMP Use

- Prevent paints, especially those with copper, from entering the water and sediments.
- Keep paint intact on the hull and remove fouling growth to reduce drag & fuel use.

Hull Cleaner BMPs⁵

- **Wait 90 days** after applying new paint. Paints release more toxicant when new.
- Soft sloughing or abrasive paints release toxicant & paint to water when cleaned. On these boats, clean only running gear and zinc anodes.
- Use only a piece of "carpet", sponge & other soft materials to clean the hull.
- Use soft nylon or similar material on rotary brush machines.
- Use stainless steel brushes & pads on non-painted, metal areas *only*.
- Use more rigorous cleaning pads *only* as needed to remove hard marine growth.
- Do not sand or strip hull paint underwater.
- Bring zinc anodes back to shore; recycle or dispose properly.
- **Clean gently** to avoid creating a plume or cloud of paint in the water.

Advising Boat Owners^{4,5}

The following information may be useful to answer client questions on hull protection & maintenance.

Maintaining the Hull and Paint

- Properly applied and maintained paints protect the hull from fouling organisms & improve performance of the boat.
- Correct application also extends paint life by reducing amount lost to harbor.
- Allow 90 days after applying new bottom paint before cleaning underwater.
- Regularly scheduled hull cleaning and Maintenance reduces hard marine growth and hull drag³.
- Repair paint bonding problems at haul out to avoid further chipping and flaking of paint into the water.

Protection from Fouling Growth

Toxicants in some hull paints limit cleaning options & increase toxicant amounts in marine waters. The following may be helpful to clients in choosing anti-fouling strategies.

- "Soft" sloughing and ablative (self polishing) hull paints release copper when cleaned underwater. Refrain from underwater cleaning⁵.
- Hard finish, conventional anti-fouling paints release less toxicant with underwater cleaning.
- Polyurethane and silicone paints contain no toxicant & do not rub off during cleaning². Don't leave most polyurethane painted hulls in water over 72 hours.
- Store infrequently used boats on land. Check local requirements & facilities for storage locations.
- Floating hoist systems hold the boat out of the water in the slip.
- Ask a repair facility if your hull paint remains effective after boat is stored out of the water².

References:

1. "Anti-fouling Bottom Paints and Fishing Vessel Efficiency" (Jeff Longmore)
2. Baywatch, A guide for Boaters (Environmental Health Coalition)
3. "Cutting Fuel Costs: Alternatives for the Commercial Fisherman" (Dewayne Hollins *et al.*)
4. Soundwatch, An Environmental Guide for Boaters (48 North)
5. Underwater Hull Cleaning Best Management Practices (Bear Underwater Services).

For more information on hull paints, ask experienced boaters & boatyard owners and see our publication, *"Selecting a Hull Paint for your Boat"*. Write to:

Cooperative Extension - Sea Grant
5555 Overland Avenue, Building 4
San Diego, California 92123

Information provided for educational purposes. Ask agencies about regulations in your area.

We wish to thank David Bear and the many other advisors &

reviewers!

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This work is sponsored in part by NOAA, National Sea Grant College Program. Department of Commerce, under grant number NA36RG0537, project number A/EA -I, through the California Sea Grant Program, in part by United States Environmental Protection Agency, under grant number NW009982-01-0, in part by the California State Resources Agency, in part by the University of California Division of Agriculture and Natural Resources and in part by the County of San Diego. The views expressed herein are those of the author and do not necessarily reflect those of the sponsors or any of their sub-agencies. The U.S. government may reproduce and distribute for governmental purposes.

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[Home Page](#) | [Back to Top of this Page](#) | [Boating Pollution Prevention Menu](#)

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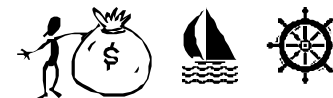
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APPENDIX # 6

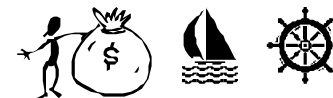


POTENTIAL FUNDING SOURCES FOR CLEAN BOATING ACTIVITIES

Grant Program	Description	Eligibility	Funding Level/ Required Match	Contact Info	Deadline
Calif. Dept. of Conservation, Div. of Recycling: Beverage Container Recycling	To support the purchase of receptacles for recycling beverage containers	All types of organizations	Amount varies-- \$500K available; No match required	http://www.consrv.ca.gov/dor/Nonprof/nonprofi.htm ; (916) 322-0613	Annual cycle; deadline in early January.
CI WMB: Used Oil Opportunity Grant Program	To help local governments establish or enhance permanent, sustainable used oil recycling programs	Local gov't, cities, counties or regional programs	Individual jurisdictions: up to \$300K; regional groups: up to \$700K; no match required	http://www.ciwmb.ca.gov/UsedOil/Grants/Opportunity/ ; Used Oil Grant Pgm., (916) 341-6457	Jan. 25, 2002 for FY 2001/02
NOAA Coastal Services Center: Special Projects	Technical, management, or planning projects that relate to human use of coastal resources or growth management in coastal areas	Nonprofits, ed. institutions, commercial orgs, state and local gov't	\$20K-\$25K; no match required	http://www.csc.noaa.gov/cms/baa.html ; Jan Kucklick, (843) 740-1279	Deadline in January
SWRCB: Coastal Nonpoint Source Control Program (Prop. 13)	Projects that restore and protect the water quality and environment of coastal waters, estuaries, bays, and near shore waters and groundwater	municipalities, local public agencies, educational institutions, nonprofits	\$50K-\$5 million; 10-20% match only for construction costs	http://www.swrcb.ca.gov/prop13/ ; Ken Harris, NPS Program, (916) 341-5550	Feb. 1, 2002
CALFED: Drinking Water Quality Program (Prop. 13)	To reduce contaminants that impair the quality of Delta and Central Valley drinking water sources	Any public or private entity may be eligible	\$50K-\$5 million; required match depends on capital cost of project	http://www.calfed.water.ca.gov/request_form.html ; John Andrew, (916) 653-9715	Feb. 1, 2002



Grant Program	Description	Eligibility	Funding Level/ Required Match	Contact Info	Deadline
BoatU.S. Clean Water Trust: Clean Water Grants	For education and hands-on efforts aimed at environmentally friendly boating and fishing	Volunteer orgs, nonprofits and US Coast Guard Auxiliary	Up to \$2K; no match required	http://www.boatus.com/cleanwater/ ; Vanessa Pert, (410) 897-0949	Annual cycle; deadline beginning of February
EPA: Pollution Prevention Incentives for States	To build and support state pollution prevention capabilities and to test, at the state level, innovative pollution prevention approaches and methodologies	State agencies	\$20K-\$200K; 50% match	http://aspe.os.dhhs.gov/cfda/p66708.htm ; Leif Magnuson, Region 9 (includes Calif.), (415) 744-2153	Annual cycle; deadline in mid-March
Dept. of Boating & Waterways: Boating Infrastructure Grant (BIG) program	To help improve docking facilities for transient, nontrailerable boats.	Public and private marinas	Tier 1: up to \$100K; Tier 2: over \$100K; 25% match	Kevin Atkinson, DBW, 916-263-8149; See "Fish and Wildlife" heading at http://www.access.gpo.gov/su_docs/fedreg/a010118c.html	Annual cycle; 2002 deadline is April 1
SWRCB: Nonpoint Source Implementation Grant [319(h)]	Watershed and land use management activities to reduce, eliminate, or prevent water pollution and to enhance water quality	Nonprofits, government agencies, educational institutions	\$25K-\$350K; 40% match	http://www.swrcb.ca.gov/nps/ofundsrc.html ; Lauma Jurkevics, Chief, Nonpoint Source Unit, (916) 341-5498	Annual; deadline in mid-June
EPA: Environmental Justice through Pollution Prevention	To help low-income and minority communities to implement pollution prevention activities	Community-based orgs, state agencies	Up to \$100K; no match required	http://www.epa.gov/opptintr/ejp2/ ; Info line: (703) 841-0483	Annual; deadline in mid-August
CIWMB: Used Oil Nonprofit Grant Program	To increase oil collection opportunities in order to reduce the potential for illegal disposal	Nonprofits	Up to \$300K; no match required	http://www.ciwmb.ca.gov/UsedOil/Grants/Nonprofit/ ; Used Oil Grant Pgm., (916) 341-6457	RPF to be issued November 2002 (estimated date)



Grant Program	Description	Eligibility	Funding Level/ Required Match	Contact Info	Deadline
Calif. Coastal Commission: Whale Tail Grants Program	To teach children and the general public to value and take responsibility for the health of the state's marine and coastal environments	Nonprofits or government entities	Up to \$50K; no match required	http://www.coastal.ca.gov/ ; Sylvie Bloch, Program Coordinator, (415) 904-5271	Annual; deadline in mid-November
EPA: Environmental Education Grants Program	Environmental education programs to enhance public awareness and the skills to make informed decisions affecting environmental quality	Nonprofits, educational institutions, env. and educ. public agencies	\$5K and lower thru \$250K (prefer \$100K and lower); 25% non-federal match	http://www.epa.gov/enviroed ; HQ for over \$25K: (202) 260-8619; Region 9 for \$25K or less: (415) 744-1161	Annual; deadline in mid-November
Dept. of Boating & Waterways: Clean Vessel Act—Sewage Pumpout Grant Program	To fund the construction, renovation, operation and maintenance of pumpout and dump stations	Local gov't & private businesses that own & operate boating facilities open to the gen'l public	No set maximum request; 25% match	http://www.dbw.ca.gov/clean.htm ; DBW, toll-free (888) 326-2822	Requests are reviewed on a monthly basis
SWRCB: Clean Water State Revolving Fund	Low-interest loans to address water quality problems from nonpoint source pollution and for estuary enhancement	Local agencies	Up to \$25 million; Interest rate = 50% of interest rate on general obligation bond	http://www.swrcb.ca.gov/fesfund/index.html ; Paul Roggensack, Loans & Grants, (916) 341-5481	No deadlines



Funding for this publication provided by the California Integrated Waste Management Board
Produced by the California Coastal Commission's Boating Clean and Green Campaign

APPENDIX # 7

Regional Water Quality Control Boards

North Coast Regional Water Quality Control Board

5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403
Tele: (707) 576-2220
Website: <http://www.swrcb.ca.gov/rwqcb1/>

San Francisco Bay Regional Water Quality Control Board

1515 Clay St. Suite 1400
Oakland, CA 94612
Tele: (510) 622-2300
Website: <http://www.swrcb.ca.gov/~rwqcb2/>

Central Coast Regional Water Quality Control Board

81 Higuera St. Suite 200
San Luis Obispo, CA 93401
Tele: (805) 549-3147
Website: <http://www.swrcb.ca.gov/~rwqcb3/>

Los Angeles Regional Water Quality Control Board

320 W. 4th Street, Suite 200
Los Angeles, CA 90013
Tele: (213) 576-6679
Website: <http://www.swrcb.ca.gov/~rwqcb4/>

Central Valley Regional Water Quality Control Board

(Main Office)
443 Routier Road, Suite A
Sacramento, CA 95827-3003
Tele: (916) 255-3088
Website: <http://www.swrcb.ca.gov/~rwqcb5/>

Central Valley Regional Water Quality Control Board

Fresno Office
3614 East Ashlan Avenue
Fresno, CA 93726
Tele: (209) 445-5140
Website: <http://www.swrcb.ca.gov/~rwqcb5/>

Central Valley Regional Water Quality Control Board

Redding Office
415 Knollcrest Drive, Suite 100
Redding, CA 96002
Tele: (916) 224-4788
Website: <http://www.swrcb.ca.gov/~rwqcb5/>

Lahontan Regional Water Quality Control Board

2501 Lake Tahoe Blvd.
So. Lake Tahoe, CA 96150
Tele: (530) 542-5400
Website: <http://www.swrcb.ca.gov/~rwqcb6/>

Lahontan Regional Water Quality Control Board

Victorville office: 5428 Civic Dr, Suite 100
Victorville, CA 92392
Tele: (760) 241-6583
<http://www.swrcb.ca.gov/~rwqcb6/>

Colorado River Regional Water Quality Control Board

73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260
Tele: (760) 346-7491
Webiste: <http://www.swrcb.ca.gov/~rwqcb7/>

Santa Ana Regional Water Quality Control Board

3737 Main St., Suite 500
Riverside, CA 92501
Tele: (909) 782-4130
Webiste: <http://www.swrcb.ca.gov/~rwqcb8/>

San Diego Regional Water Quality Control Board

9174 Sky Park Court, Suite 100,
San Diego, Ca 92123
Tele: (858)467-295,
Webiste: <http://www.swrcb.ca.gov/~rwqcb9/>

APPENDIX # 9

APPENDIX # 10

**Fact Sheet
April 2001**

Used Oil and Oil Filter Management



*It is DTSC's
mission to protect
public health
and the
environment
from
harmful exposure
to hazardous
substances.*

This fact sheet was produced by the Department of Toxic Substances Control (DTSC) to provide an overview for generators and transporters of used oil and used oil filters in California. For a complete description of those requirements, consult Chapter 6.5, Division 20 of the California Health and Safety Code, including Article 13 (commencing with section 25250), and Title 22, California Code of Regulations (CCR), Division 4.5, including Chapter 29 (used oil) (commencing with section 66279.1) and section 66266.130 (used oil filters). If you generate used oil, oil filters or other hazardous waste, you should consult with your Certified Unified Program Agency (CUPA). Finally, DTSC strongly encourages all businesses generating hazardous waste to consider waste minimization, source reduction and pollution prevention.

USED OIL MANAGEMENT

Legal Definition of Used Oil

“Used oil means any oil that has been refined from crude oil, or any synthetic oil, that has been used, and, as a result of use or as a consequence of extended storage, or spillage, has been contaminated with physical or chemical impurities”. [HSC 25250.1](#)

Used oil includes, but is not limited to, the following:

Used motor oils:

- Vehicle crankcase oils
- Engine lubricating oils
- Transmission fluids
- Gearbox and differential oils

State of California



California
Environmental
Protection Agency



The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demands and cut your energy costs, see our website at www.dtsc.ca.gov.

Used industrial oils:

Hydraulic oils
Compressor oils
Turbine oils
Bearing oils
Gear oils
Transformer (electrical) oils
Refrigeration oils
Metalworking oils
Railroad oils

Used oil does NOT include:

Antifreeze
Brake fluid
Other automotive wastes
Fuels (gasoline, diesel, kerosene, etc.)
Grease
Solvents
Substances which are not oils
Oils with a flashpoint below 100°F
Oils containing more than 1,000 parts per million (ppm) total halogens unless the rebuttable presumption is rebutted
Oils mixed with hazardous waste
Wastewater containing small amounts of used oil
Oils containing 5 ppm polychlorinated biphenyls (PCBs) or greater
Oily wastes that are not used oil
Oily wastewaters that are not used oil
Tank bottoms
Used oil processing bottoms
Used oil re-refining distillation bottoms

Cooking oils (edible)

Edible oils that used for industrial purposes and that do not exhibit a hazardous characteristic

Used Oil Management

Used oil must be managed as a hazardous waste in California unless it is shown to meet one of the specifications for recycled oil in [HSC 25250.1\(b\)](#) or qualifies for a recycling exclusion under [HSC 25143.2](#). In most instances, this means that the generator will contract with a registered hazardous waste transporter to have the used oil picked up within the appropriate accumulation period. The accumulation period is 90 days for large quantity generators or 180 days for generators of less than 2200 lbs. of hazardous waste per month (270 days if the generator sends the oil to a used oil facility that is more than 200 miles away) [66262.34](#). The transporter must take the oil to an authorized used oil storage or treatment facility. Among the facilities are used oil recycling operations where the used oil is processed into recycled oil or re-refined into high-class lubricant.

Mixing of hazardous waste, including household hazardous waste, with used oil is prohibited.

Used Oil Generator Requirements

Persons or businesses generating used oil are required to meet all used oil generator requirements. Used oil collection centers must meet the same requirements. [66279.20](#) [66269.21](#) Householders who change their own oil (do-it-yourselfers) are exempted from regulation as used oil generators. They must, however, manage

their used oil appropriately (e.g., by taking it to a used oil collection center, etc., and never disposing of it to land, water, storm drains, etc.) Householders are allowed to transport their own used oil to a used oil collection center or to a used oil recycling facility if specified conditions are met. These conditions are described in this fact sheet under the section “[Transportation of Used Oil](#)” and in [HSC 25250.11](#). Some communities have a curbside used oil pickup program; check with your local solid waste or environmental health agency to see if it offered in your area.

An EPA Identification Number issued by DTSC is required for each site where used oil is stored. A generator who stores used oil at two places in the same site needs only one EPA Identification Number. There is one exception to this requirement. Generators of 100 kilograms or less of hazardous waste per month (including used oil) who ship used oil under a modified manifest ([HSC 25250.8](#)) are not required to obtain an EPA Identification Number. [66262.12](#) See the Duty Officer Fact sheet “[EPA Identification Numbers](#)”.

Used oil must be stored in tanks or containers in good condition. Tanks and containers must be made of non-earthen, non-absorbing, rust-resistant material such as steel or oil-resistant plastic, and have adequate structural support to contain the used oil. Good condition means no severe rusting, no apparent structural defects or deterioration, and no leaking. All containers must have tight-fitting lids that are kept closed except when used oil is being added or removed. Regular inspections and routine maintenance of all storage tanks and containers are required. Faulty tanks and containers must be repaired or replaced. Definitions of container and tank are given in [66260.10](#);

general information may be found in [66262.34\(a\)\(1\)](#).

Secondary containment is required for storage tanks. This is a backup containment system designed to prevent the release and migration of wastes or accumulated liquids out of a storage tank or a storage tank system. Examples of secondary containment systems include an impervious bermed area or liner, a vault, or a double-walled tank. [66262.34\(a\)\(1\)](#)

Above-ground storage tanks and containers accumulating used oil, and fill pipes used to transfer used oil into underground storage tanks must be labeled with the words “USED OIL-HAZARDOUS WASTE,” and the initial date of accumulation. In addition, containers must be labeled with the name and address of the generator. [66262.34\(f\)](#) For shipping, containers must also be labeled as follows:

HAZARDOUS WASTE - State and Federal Law Prohibit Improper Disposal. If found, contact the nearest police or public safety authority, the U.S. Environmental Protection Agency or the California Department of Health Services.

- Generator’s name and address
- Proper Department of Transportation (DOT) shipping name
- Generator’s EPA Identification Number
- Uniform Hazardous Waste Manifest number and the shipping identification number

Additional requirements for used oil generators are contained in the HSC and 22 CCR provisions cited at the beginning of this fact sheet.

The Rebuttable Presumption

HSC 25250.1(a)(1)(B)(v) 66279.10

Used oil handlers (e.g., generators, used oil collection centers, transporters transfer facilities and used oil recycling facilities) are required to determine whether the total halogen content of each used oil shipment exceeds 1,000 ppm. Used oil containing more than 1,000 ppm total halogens *is presumed* to have been mixed with halogenated hazardous waste and must be managed as a Resource Conservation and Recovery Act (RCRA) hazardous waste unless the used oil can be demonstrated not to have been mixed with halogenated hazardous waste (i.e., unless the presumption is rebutted). This is a “rebuttable presumption.”

The “Rebuttable Presumption” Works as Follows in California

Generators, transporters and used oil collection centers are required to test or apply knowledge to determine whether a used oil shipment has a total halogen content over or under 1,000 ppm. If a generator, transporter or used oil collection center chooses to apply knowledge to determine that used oil does not contain more than 1,000 ppm total halogens, this must be done in accordance with criteria specified in [66279.10\(a\)\(1\)\(B\)](#) for generators, [66279.10\(a\)\(3\)\(B\)](#) for transporters, and [66279.10\(a\)\(6\)](#) for used oil collection centers.

Used oil transfer facilities and used oil recycling facilities are required to test each shipment of used oil for total halogens before accepting the shipment.
[66279.90\(a\)](#)

If it is determined that the used oil shipment contains greater than 1,000 ppm total halogens, used oil is presumed to have been mixed with halogenated hazardous waste and must be handled as RCRA hazardous waste, unless the presumption is rebutted.

In order to rebut the presumption that the used oil shipment was mixed with RCRA hazardous waste, the used oil handler must demonstrate that the used oil was not mixed with halogenated hazardous waste. Where this demonstration is successfully made, the used oil is regulated as used oil. The rebuttable presumption is deemed rebutted for the following types of used oils where specified conditions [66279.10\(b\)](#) are met: metalworking oils or fluids containing chlorinated paraffins, refrigeration oils contaminated with chlorofluorocarbons, used oil which is exclusively household “do-it-yourselfer” used oil or used oil from a conditionally exempt small quantity generator. (A conditionally exempt small quantity generator generates no more than 100 kilograms of RCRA hazardous waste in a month and does not accumulate more than 1,000 kilograms of hazardous waste onsite at any time.) [40 CFR 261.5](#)

Transporting Used Oil

In general, California law requires that a registered hazardous waste transporter transport used oil. However, there are a few instances in which the use of a registered hazardous waste transporter is not required. These are as follows:

Householders and conditionally exempt small quantity generators are allowed to transport up to 20 gallons of used oil per trip to an authorized used oil collection center if the oil is carried in containers that hold 5 gallons or less and specified

conditions are met. Authorized used oil collection centers include certified used oil collection centers ([Public Resources Code Section 48622](#)), recycle-only household hazardous waste collection facilities, or collection facilities operating pursuant to [HSC 25250.11](#). If specified conditions are met, mobile maintenance operations (see below) may transport up to 55 gallons of used oil in any one vehicle at any one time from an off-site location to a consolidation point.

When used oil is transported by a registered hazardous waste transporter, either a full hazardous waste manifest or a modified hazardous waste manifest must be used. When a modified hazardous waste manifest is used, the driver is required to provide the generator (at the time of used oil pickup) with a legible copy of a receipt for each quantity of used oil received. The generator must maintain these receipts for 3 years. Each receipt must contain the following information:

- Generator's name, address, EPA Identification Number (if applicable) and telephone number.
- Generator's signature or signature of generator's representative.
- Date of shipment.
- State manifest number (pre-printed on the manifest).
- Volume and shipping description of each type of used oil received.
- Name and address of the authorized facility to which the used oil is being transported.
- The transporter's name, address and identification number.
- The driver's signature.

Additional requirements for used oil transporters are contained in the statutes and regulations cited at the beginning of this fact sheet.

Mobile Maintenance Operations **[HSC 25250.12](#)**

Maintenance businesses that generate used oil in the performance of routine maintenance operations at off-site locations are subject to special requirements. Such businesses include off-site heavy equipment operations (e.g., construction vehicle fleets) and mobile oil-changing businesses providing oil changes for personal and business vehicles at the customer's location. The following requirements apply:

- The owner/operator of the mobile maintenance business must have a point of consolidation for the used oil. The point of consolidation can be either at the maintenance business location or at a separate location owned by another person, such as a service station.
- The maintenance business must have an EPA ID number. When a separate location is used for consolidation, both the maintenance business and the separate location must have EPA ID numbers.
- The point of consolidation must be at a non-residential location.
- The transport vehicle must be owned by the business or by an employee of the business.
- The business is not required to register as a hazardous waste transporter as long as they transport no more than 55 gallons of used oil from off-site location(s) to the point of consolidation at any one time.

- The used oil is deemed to be generated at the point of consolidation upon consolidation.
- The used oil must be handled and stored at the point of consolidation in accordance with all applicable hazardous waste laws.
- The consolidated used oil must be transported by a registered hazardous waste transporter from the point of consolidation to a permitted used oil recycling facility.

Miscellaneous

It is unlawful to dispose of used oil on land, to sewers and other water systems, or to burn used oil as a fuel or by incineration, including in space heaters and similar devices. The use of used oil as a dust suppressant (road oiling) or for insect or weed control is prohibited. [HSC 25250.5](#)

Generators of used oil who also operate used oil collection centers, such as service stations, are advised to not mix the used oil generated in their business with the used oil from the collection center. The rebuttable presumption is not deemed rebutted if used oil from householders or conditionally exempt small quantity generators has been mixed with used oil from other sources.

MANAGING USED OIL FILTERS [66266.130](#)

Introduction

Used oil filters may exhibit hazardous characteristics for lead, other heavy metals and oil-based compounds. Used oil filters must either be managed as hazardous waste, or in accordance with the

requirements found in the regulations outlined in this fact sheet. DTSC adopted special regulations in 1991 to encourage recycling of used oil filters and to protect public health and safety and the environment from the potential hazards posed by disposal of used oil filters. These requirements are directed primarily at non-household generators of used oil filters, such as businesses and used oil collection centers. Used oil filters not managed as described in this fact sheet must be managed as fully regulated hazardous waste. Disposal of used oil filters in trash cans and at sanitary landfills is prohibited. Fuel filters, including fuel dispenser and diesel fuel filters, are not used oil filters and may not be managed in the same manner as used oil filters.

Summary of Management Requirements

Used oil filters must be:

- Drained of all free-flowing oil.
- Properly contained, labeled and stored.
- Stored without exceeding allowed time limits.
- Transported to an allowed destination for purposes of metal reclamation.
- Transported under a bill of lading with a copy kept by the generator for three years.
- All used oil removed from the filters must be managed in accordance with all applicable requirements of [Article 13](#), [HSC Chapter 6.5](#), [Division 20](#) and [22 CCR Section 66279](#).

Detailed Management Requirements

Draining

Used oil filters must be drained of all free-flowing used oil. “Free-flowing used oil” means a continuous stream of used oil from the filter when it is inverted. Used oil flowing drop-by-drop is not considered to be free-flowing. If the filter is equipped with a flapper valve or other device that impedes the drainage of used oil from the filter, that device must be manipulated to allow the used oil to leave freely.

Properly drained oil filters may be punctured, crushed, opened, further drained or otherwise handled if the purpose of the treatment is to prepare the filters for recycling. The treatment does not require a DTSC permit. The generator must properly manage all used oil and other residues generated from the treatment of the filters.

Containers

Businesses or public agencies that accept used oil filters from householders must place the filters in containers upon acceptance to capture all used oil that separates from the filters. Upon reaching a location where proper drainage is practical, the filters must be contained as described below, and any used oil drained from the filters managed in accordance with all applicable requirements.

- The drained filters must be contained in rainproof, non-leaking containers with tightly-sealed lids.
- The container must be labeled “Drained Used Oil Filters” and the initial date of accumulation or receipt marked on each container.

- The initial date of accumulation is the date when the first filter is placed in the container, or the date when a full or partially full container of filters is received at a second location.

Storage

- Up to one ton of used oil filters may be stored for a period of up to one year, unless the storage facility has a hazardous waste permit authorizing longer storage of used oil filters.
- Storage of one ton or more of used oil filters is limited to 180 days, unless the storage facility has a hazardous waste permit authorizing longer storage of used oil filters.

Allowed Destinations

The only allowed destinations for used oil filters are:

- To a smelter or scrap metal processor where used oil filters are recycled.
- To a municipal solid waste incinerator for energy recovery if the residual casings are subsequently transferred to a smelter or scrap metal processor for recycling.
- To a storage or consolidation facility that subsequently transfers the filters to a smelter, scrap metal processor or municipal solid waste incinerator as described above.
- To an authorized hazardous waste facility.

Transportation

- Only properly-drained filters may be transported.

- The containers must be tightly-sealed during transportation to prevent any spillage of used oil.
- The containers must be well-secured in the transport vehicle to prevent movement or tipping during transportation.
- A bill of lading must accompany each shipment of used oil filters, and must contain the following information:
 - Generator's name, address, and telephone number of the generator
 - Transporter's name, address, and telephone number of the transporter
 - Name, address and telephone number of the receiving smelter, scrap metal processor, municipal solid waste incinerator, or storage or consolidation facility
 - Quantity and size of the containers in the shipment
 - Date of transportation
- A copy of each bill of lading must be maintained by the transporter, generator and receiving facility for 3 years.

USEFUL CONTACT INFORMATION

DTSC Public and Business Liaisons (Duty Officers)

If you cannot find the answer to your question in this fact sheet, contact the DTSC Public and Business Liaisons (Duty Officers). You can call them at 800-728-6942, or contact them via the Department of Toxic Substances Control website — <http://www.dtsc.ca.gov> — click on Frequently Asked Questions, and follow

the Duty Officer link to the page listing Duty Officers' email addresses (http://www.dtsc.ca.gov/oea/duty_officers/about.html.)

DTSC Public and Business Liaisons provide informal guidance only regarding management of hazardous waste for the convenience of the public. Such advice is not binding upon DTSC, nor does it have the force of law. If you would like a formal opinion on a matter by DTSC, please contact the responsible program office directly. You should also refer to the statutes and regulations, DTSC Policies and Procedures, and other formal documents. We also encourage you to complete a Cal/EPA Customer Satisfaction survey <http://www.calepa.ca.gov/about/custsvc.htm> so that we may improve our Public and Business Liaison Program.

Other Useful Numbers

For specific locations of authorized used oil collection centers in your area:

Cal/EPA Recycling Hotline:
1-(800) CLEAN-UP or 1-(800) 253-2687
or
<http://www.1800cleanup.org/>

For additional information on EPA ID Numbers:

DTSC Generator Information Services
Section (916) 255-1136 or (800) 618- 6942 (California only)
See the online Fact Sheet:
“[EPA Identification Numbers](http://www.dtsc.ca.gov/library/fact_sheets/topics.html)”
http://www.dtsc.ca.gov/library/fact_sheets/topics.html

To report illegal disposal or management of used oil or used oil filters, contact:

Your local [Certified Unified Program Agency](#) or

DTSC Waste-Alert Hotline:

(800) 698-6942 or

911 - Only if you see a crime (such as disposal to a storm drain) in progress.

See the online list of local government contacts:

http://www.dtsc.ca.gov/oea/duty_officers/contacts.html

For questions about operating a certified used oil collection center:

[California Integrated Waste Management Board](#) (916) 341-6457

APPENDIX # 14

Management of Spent Lead-Acid Batteries



*It is DTSC's
mission to protect
public health
and the
environment
from
harmful exposure
to hazardous
substances.*

The Duty Officers of the Department of Toxic Substances Control (DTSC) prepared this fact sheet to provide general information about the hazardous waste requirements and exemptions for managing lead-acid batteries. This fact sheet covers the accumulation, transportation and recycling of those batteries. Throughout this fact sheet, numbers appearing as ([66263.42](#)) represent citations from Title 22, California Code of Regulations (22 CCR), or, when preceded by "HSC," from the California Health and Safety Code. Clicking on the numbers will take you to sites containing the regulations. If you generate hazardous waste, you should consult with your Certified Unified Program Agency (CUPA). You may be subject to local ordinances. Finally, DTSC strongly encourages all businesses generating hazardous waste to consider waste minimization, source reduction and pollution prevention. Go to the Duty Officer FAQs for useful links.

DOES THE INFORMATION IN THIS FACT SHEET APPLY TO ME?

The batteries discussed here are equivalent in size and type to common vehicle batteries, including utility batteries and those used in emergency power supplies. Because they contain lead and sulfuric acid, lead-acid battery **disposal** is fully regulated as a hazardous waste management activity, but when intact lead-acid batteries are managed for **recycling**, the handling requirements are relaxed. Processing lead-acid batteries for recycling by draining the electrolyte, crushing, smelting or other physical methods is a fully regulated hazardous waste activity that requires a hazardous waste treatment permit. Contact your local DTSC Facility Permitting Unit if you intend to process batteries in this manner. The "universal waste" regulations address small, sealed lead-acid "gel-cell" type batteries and large utility batteries, such as fork lift batteries. See section [66273.2](#) for the universal waste battery management regulations.

The regulations addressing used lead-acid battery management are found in [66266.80](#) and [66266.81](#). Generators of lead-acid batteries include vehicle

State of California



California
Environmental
Protection Agency



owners, garages, parts stores and service stations, as well as other businesses and factories that generate dead or damaged batteries. If you generate no more than 10 batteries per year, or store or transport no more than 10 batteries at one time, you are not subject to the reporting and record keeping requirements given in the battery regulations as long as the batteries will go to someone who stores, recycles, uses, reuses or reclaims them. This also applies to people who trade in an old battery for a new one and to the person accepting the trade-in. Persons or businesses that generate more than 10 batteries per year, or who store or transport more than 10 at one time, may still manage them under the relaxed standards, but must keep records about the batteries as described below.

How do consumers get rid of spent batteries?

Retailers are required to accept the trade-in of a spent lead-acid battery by a consumer upon purchase of a new one, ([HSC 25215.3](#)), and certain dealers may accept them without a purchase (but you should ask first). Some battery wholesalers also accept them from businesses and the public. The public can also take their lead-acid batteries to a household hazardous waste collection location and to certain recycling centers. Call 1-800-CLEANUP or visit this [HHW Community Locator](#) (have your zip code ready) and follow the prompts. Again, you should inquire with the facility before taking your batteries in. In some places, conditionally exempt small quantity generators (businesses generating less than 220 pounds of hazardous waste per month) may also take their batteries to one of these locations. If you are taking your batteries to one of these locations, you do not need a

manifest or a bill of lading, nor are there reporting requirements.

It is illegal to dispose of, or even try to dispose of, a lead-acid battery on or in any land, including landfills, lakes, streams or the ocean. Abandoning lead-acid batteries on streets and parking lots or placing them in waste dumpsters also constitutes illegal hazardous waste disposal, and can be prosecuted under state law. The penalty can be up to \$25,000 per occurrence. If you plan to do anything other than recycle these batteries, you must manage them as hazardous waste.

What are the rules about accumulating and storing spent batteries?

The reason that spent batteries are managed as hazardous waste is that batteries can leak hazardous acid and lead if they are cracked, overturned or missing a cap. There are many sites in California where mountains of broken batteries left a legacy of highly contaminated soil and groundwater. Businesses must take care in the way that they accumulate batteries prior to shipment to a recycler. Undamaged batteries should be stored upright on a covered pallet over a non-reactive, curbed and sealed surface such as coated concrete or asphalt, and care should be taken to prevent the terminals from short-circuiting. Check with your local hazardous waste agency to see if there are additional local requirements or recommendations for the storage of batteries. "Damaged batteries" are batteries that are cracked, broken, or missing one or more caps. You must store and transport damaged batteries in non-reactive, structurally-secure, closed containers such as polyethylene buckets or drums. If missing caps can be replaced and there are

no other leaks or damage, the battery can be managed along with intact batteries. Damaged and intact batteries can be transported together. You must label the container holding damaged batteries in ink or paint with the date the first battery was placed there. This is considered the accumulation start date. For other packaging advice, check with the person that will be receiving the shipment of batteries from you.

Whether you are a generator or considered to be an interim storage facility (one which holds batteries until they are sent to a battery breaker or recycler), and if you keep one ton or less, you may store those batteries for no more than one year at any single location. If you hold more than one ton of batteries at one location, you may not keep them for longer than 180 days. If these quantities or times are exceeded, the business is no longer exempt from the regulations for generation, storage and transportation of hazardous waste.

If I am shipping spent batteries, what should I know about transportation requirements?

If you ship more than 10 batteries at a time, a legible hazardous waste manifest or a legible bill of lading must accompany the shipment. The generator, transporter and storage, recycling or disposal facility each must retain their copies of either of those documents for three years. The bill of lading must be dated and show the names and addresses of the generator, transporter, and receiving location, as well as the number of batteries transported. [13 CCR Section 1161](#)

The transporter must make certain that the batteries are loaded so as to prevent damage, leakage of lead or acid, or short circuits, and

must comply with all Department of Transportation (DOT) regulations for hazardous materials. [Title 49 Code of Federal Regulations \(CFR\) Parts 100-185](#). You may transport damaged batteries (packaged as described above) with intact batteries, as long as all DOT standards are met.

What kind of record keeping and reporting is required?

Brokers and handlers of more than 10 batteries per year and those who transport more than 10 batteries at a time are required by the battery regulations to keep all copies of bills of lading and manifests related to the transportation of lead-acid batteries for a period of at least three years. DTSC no longer requires you to submit an annual battery report per section 66266.81(a)(7)(C), but you must keep the data that would enable you to create such a report. That data should be found on the battery shipment bills of lading and manifests mentioned above.

If you cannot find the answer to your question in this fact sheet, please contact the Duty Officers directly. You can call them at 800-728-6942, or contact them via the Department of Toxic Substances Control website -- <http://www.dtsc.ca.gov> -- click on Frequently Asked Questions, and you will go to a map of California with links to the Duty Officers' email.

DTSC Duty Officers provide informal guidance only regarding management of hazardous waste for the convenience of the public. Such advice is not binding upon DTSC, nor does it have the force of law. If you would like a formal opinion on a matter

by DTSC, please contact the responsible program office directly. You should also refer to the statutes and regulations, DTSC Policies and Procedures, and other formal documents.

If you believe that you have received incorrect information from a Duty Officer, please contact one of the Regional

Coordinators (Carol Northrup in Northern California, at 510-540-3919; John Hinton in Southern California, at 818-551-2823). We also encourage you to complete a Cal/EPA Customer Satisfaction survey (<http://www.calepa.ca.gov/about/custsvc.htm>) so that we may improve our Duty Officer Program.